

## SEARCH REQUEST FORM

7-446 82

Examiner # (Mandatory): \_\_\_\_\_ Requester's Full Name: CookArt Unit 1614 Location (Bldg/Room#): 6th Floor 307 Phone (circle 305 306 308) \_\_\_\_\_Serial Number: 09138116 Results Format Preferred (circle): PAPER DISK E-MAIL

Title of Invention \_\_\_\_\_

Inventors (please provide full names): Daniel Earl SnyderEarliest Priority Date: 6/22/99

Keywords (include any known synonyms registry numbers, explanation of initialisms):

## Search Topic:

Please write detailed statement of the search topic, and the concept of the invention. Describe as specifically as possible the subject matter to be searched. Define any terms that may have a special meaning. Give examples of relevant citations, authors, etc., if known. You may include a copy of the abstract and the broadcast or most relevant claim(s).

Please provide structure & known uses for  
spinosyn

- Instant composition comprises  
spinosyn, surfactant, amide, silicone
- Please identify pediculus humanus humanus

Thanks,  
Bellevue

## STAFF USE ONLY

Searcher: K. FullerSearcher Phone #: 308-4290Searcher Location: STICDate Picked Up: 7/26/99Date Completed: 7/27/99Clerical Prep Time: 20Terminal Time: 22

Number of Databases: \_\_\_\_\_

## Type of Search

\_\_\_\_ N.A. Sequence

\_\_\_\_ A.A. Sequence

\_\_\_\_ Structure (#)

\_\_\_\_ ☒ Bibliographic

\_\_\_\_ Litigation1

\_\_\_\_ Fulltext

\_\_\_\_ Procurement

\_\_\_\_ Other

## Vendors (include cost where applicable)

\_\_\_\_ STN

\_\_\_\_ Questel/Orbit

\_\_\_\_ Lexis/Nexis

\_\_\_\_ WWW/Internet

\_\_\_\_ In-house sequence systems (list)

\_\_\_\_ Dialog

\_\_\_\_ Dr. Link

\_\_\_\_ Westlaw

\_\_\_\_ Other (specify)

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DICTIONARY FILE UPDATES: 27 JUL 99 HIGHEST RN 229032-88-6

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=> d his 11

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FILE 'REGISTRY' ENTERED AT 15:15:43 ON 27 JUL 1999

E SPINOSYN/CN

E E12

E E12

L1 25 S SPINOSYN ?/CN

=> d 11 1-25



L1 ANSWER 1 OF 25 REGISTRY COPYRIGHT 1999 ACS

RN 188483-42-3 REGISTRY

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,3,4-tri-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-4,14-dimethyl-, [2S-[2R\*,3aS\*,5aR\*,5bR\*,9R\*,13R\*(2S\*,5R\*,6S\*),14S\*,16aR\*,16bR\*]]-, (2R,3R)-2,3-dihydroxybutanedioate (1:1) (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,3,4-tri-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-4,14-dimethyl-, [2S-[2R\*,3aS\*,5aR\*,5bR\*,9R\*,13R\*(2S\*,5R\*,6S\*),14S\*,16aR\*,16bR\*]]-, [R-(R\*,R\*)]-2,3-dihydroxybutanedioate (1:1)

OTHER NAMES:

CN **Spinosyn D tartrate**

FS STEREOSEARCH

MF C42 H67 N O10 . C4 H6 O6

SR CA

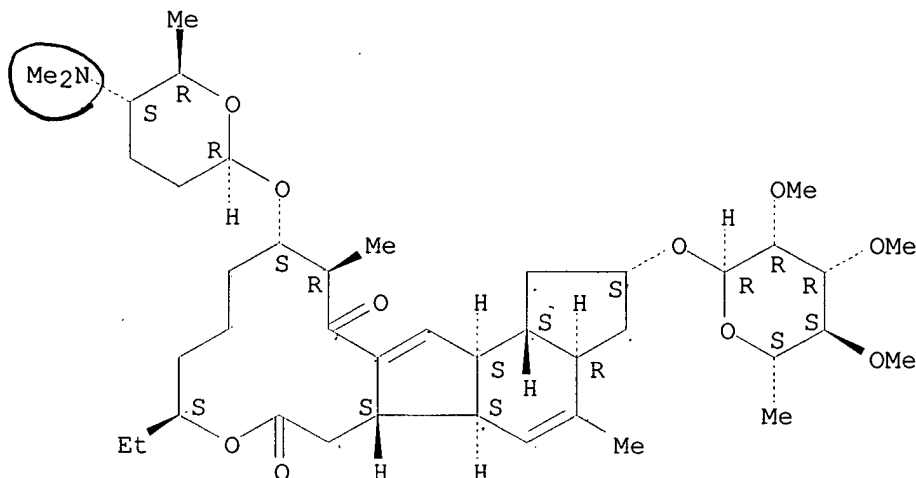
LC STN Files: CA, CAPLUS, TOXLIT

CM 1

CRN 131929-63-0

CMF C42 H67 N O10

Absolute stereochemistry.



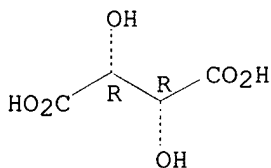
CM 2

CRN 87-69-4

CMF C4 H6 O6

514/31

Absolute stereochemistry.



1 REFERENCES IN FILE CA (1967 TO DATE)

1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 2 OF 25 REGISTRY COPYRIGHT 1999 ACS

RN 188483-41-2 REGISTRY

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,3,4-tri-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-14-methyl-, [2R-[2R\*,3aS\*,5aR\*,5bS\*,9S\*,13S\*(2R\*,5S\*,6R\*),14R\*,16aS\*,16bR\*]]-, (2R,3R)-2,3-dihydroxybutanedioate (1:1) (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,3,4-tri-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-14-methyl-, [2R-[2R\*,3aS\*,5aR\*,5bS\*,9S\*,13S\*(2R\*,5S\*,6R\*),14R\*,16aS\*,16bR\*]]-, [R-(R\*,R\*)]-2,3-dihydroxybutanedioate (1:1)

OTHER NAMES:

CN Spinosyn A tartrate

FS STEREOSEARCH

MF C41 H65 N O10 . C4 H6 O6

SR CA

LC STN Files: CA, CAPLUS, TOXLIT

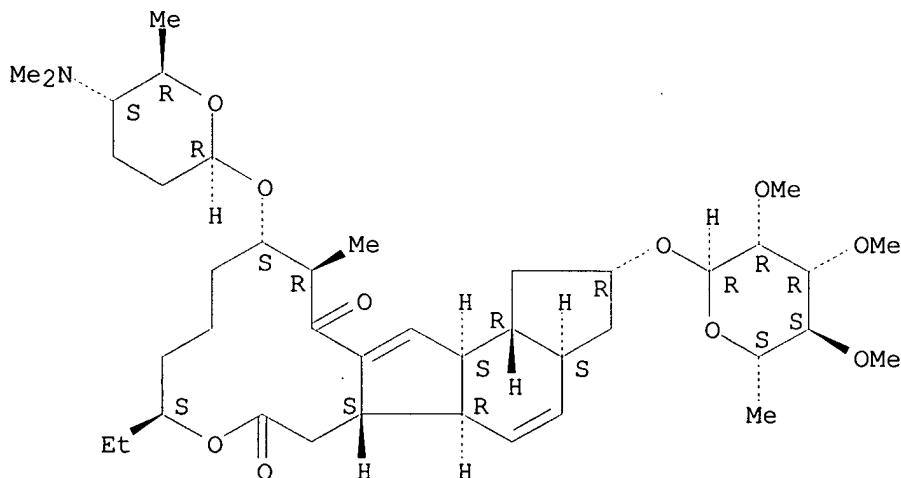
CM 1

CRN 131929-60-7

CMF C41 H65 N O10

KATHLEEN FULLER STIC LIBRARY 308-4290

Absolute stereochemistry. Rotation (-).

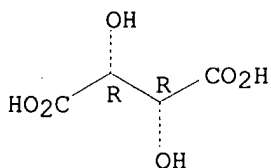


CM 2

CRN 87-69-4

CMF C4 H6 O6

Absolute stereochemistry.



1 REFERENCES IN FILE CA (1967 TO DATE)

1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 3 OF 25 REGISTRY COPYRIGHT 1999 ACS

RN 159195-06-9 REGISTRY

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,3-di-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[ (2R,5S,6R)-5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-9,14-dimethyl-, (2R,3aS,5aR,5bS,9S,13S,14R,16aS,16bR)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,3-di-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-9,14-dimethyl-, [2R-[2R\*,3aS\*,5aR\*,5bS\*,9S\*,13S\*(2R\*,5S\*,6R\*),14R\*,16aS\*,16bR\*]]-

OTHER NAMES:

CN A 83543Y

CN **Spinosyn Y**

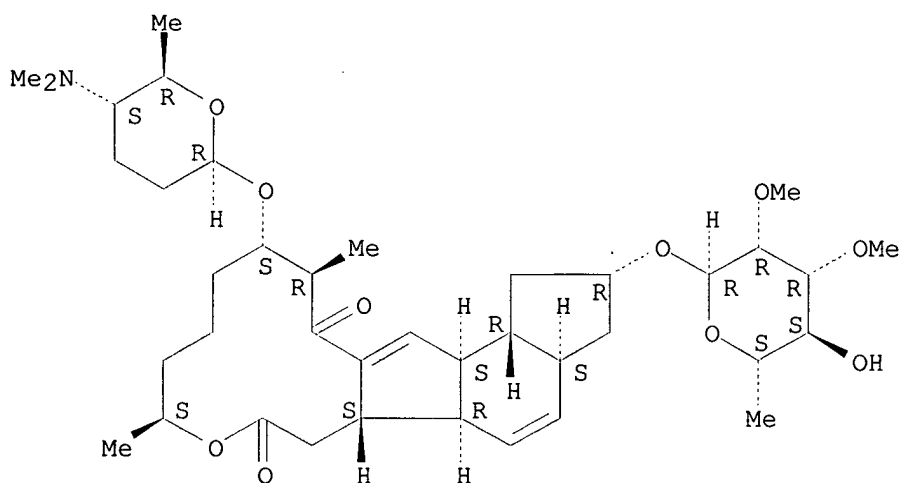
FS STEREOSEARCH

MF C39 H61 N O10

SR CA

LC STN Files: CA, CAPLUS, TOXLIT, USPATFULL

Absolute stereochemistry.



4 REFERENCES IN FILE CA (1967 TO DATE)

4 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 4 OF 25 REGISTRY COPYRIGHT 1999 ACS

RN 159195-05-8 REGISTRY

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2-O-methyl-  
.alpha.-L-mannopyranosyl)oxy]-13-[[ (2R,5S,6R)-5-(dimethylamino)tetrahydro-  
6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16  
b-tetradecahydro-4,14-dimethyl-, (2S,3aR,5aS,5bS,9S,13S,14R,16aS,16bS)-  
(9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2-O-methyl-  
.alpha.-L-mannopyranosyl)oxy]-13-[[5-(dimethylamino)tetrahydro-6-methyl-2H-  
pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-  
tetradecahydro-4,14-dimethyl-, [2S-[2R\*,3aS\*,5aR\*,5bR\*,9R\*,13R\*(2S\*,5R\*,6S  
\*),14S\*,16aR\*,16bR\*]]-

OTHER NAMES:

CN A 83543W

CN **Spinosyn W**

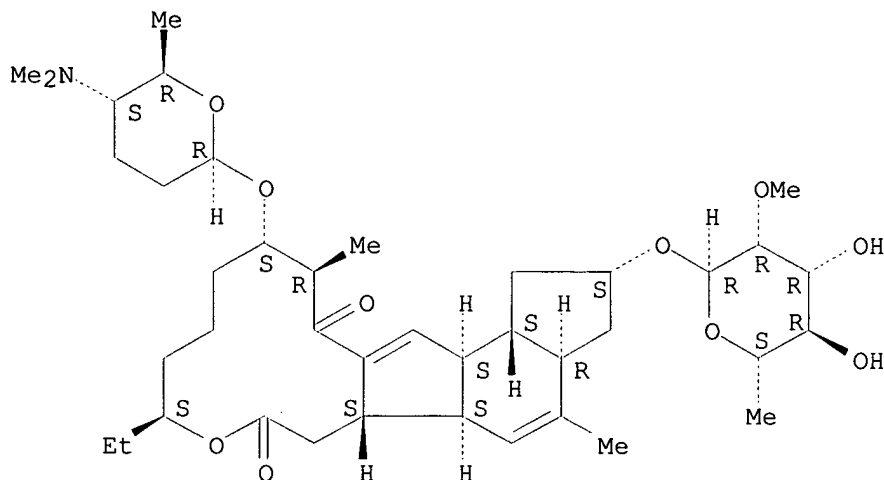
FS STEREOSEARCH

MF C40 H63 N O10

SR CA

LC STN Files: CA, CAPLUS, TOXLIT, USPATFULL

Absolute stereochemistry.



3 REFERENCES IN FILE CA (1967 TO DATE)

3 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 5 OF 25 REGISTRY COPYRIGHT 1999 ACS

RN 159195-04-7 REGISTRY

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-3-O-methyl-  
.alpha.-L-mannopyranosyl)oxy]-13-[[ (2R,5S,6R)-5-(dimethylamino)tetrahydro-  
6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16  
b-tetradecahydro-4,14-dimethyl-, (2S,3aR,5aS,5bS,9S,13S,14R,16aS,16bS)-  
(9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-3-O-methyl-  
.alpha.-L-mannopyranosyl)oxy]-13-[[5-(dimethylamino)tetrahydro-6-methyl-2H-  
pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-  
tetradecahydro-4,14-dimethyl-, [2S-[2R\*,3aS\*,5aR\*,5bR\*,9R\*,13R\*(2S\*,5R\*,6S  
\*),14S\*,16aR\*,16bR\*]]-

OTHER NAMES:

CN A 83543V

CN **Spinosyn V**

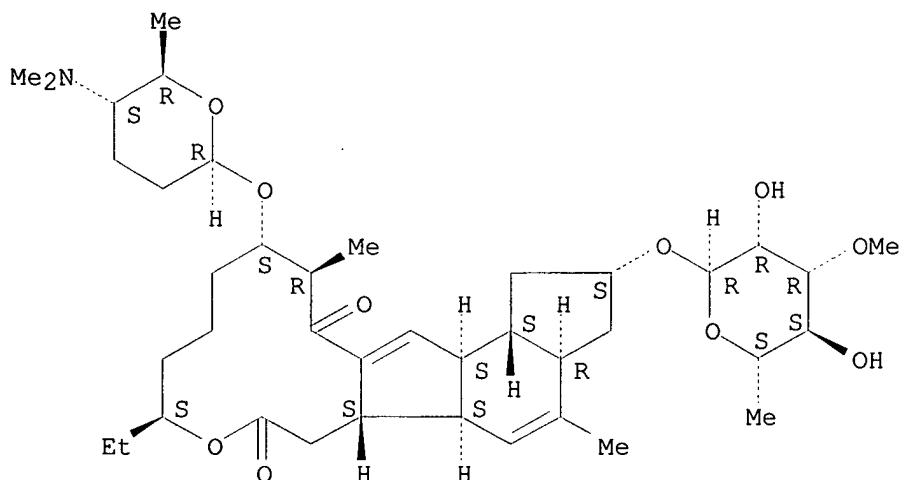
FS STEREOSEARCH

MF C40 H63 N O10

SR CA

LC STN Files: CA, CAPLUS, TOXLIT, USPATFULL

Absolute stereochemistry.



3 REFERENCES IN FILE CA (1967 TO DATE)

3 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 6 OF 25 REGISTRY COPYRIGHT 1999 ACS

RN 159195-03-6 REGISTRY

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-3-O-methyl-  
.alpha.-L-mannopyranosyl)oxy]-13-[[ (2R,5S,6R)-5-(dimethylamino)tetrahydro-  
6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16  
b-tetradecahydro-14-methyl-, (2R,3aS,5aR,5bS,9S,13S,14R,16aS,16bR)- (9CI)  
(CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-3-O-methyl-  
.alpha.-L-mannopyranosyl)oxy]-13-[[5-(dimethylamino)tetrahydro-6-methyl-2H-  
pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-  
tetradecahydro-14-methyl-, [2R-[2R\*,3aS\*,5aR\*,5bS\*,9S\*,13S\*(2R\*,5S\*,6R\*),1  
4R\*,16aS\*,16bR\*]]-

OTHER NAMES:

CN A 83543U

CN **Spinosyn U**

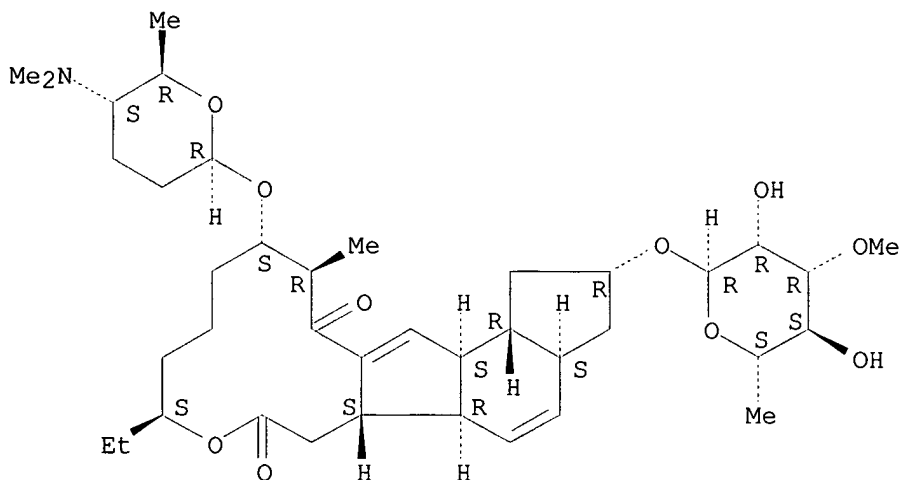
FS STEREOSEARCH

MF C39 H61 N O10

SR CA

LC STN Files: CA, CAPLUS, TOXLIT, USPATFULL

Absolute stereochemistry.



3 REFERENCES IN FILE CA (1967 TO DATE)

3 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 7 OF 25 REGISTRY COPYRIGHT 1999 ACS

RN 159195-02-5 REGISTRY

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2-O-methyl-  
.alpha.-L-mannopyranosyl)oxy]-13-[[ (2R,5S,6R)-5-(dimethylamino)tetrahydro-  
6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16  
b-tetradecahydro-14-methyl-, (2R,3aS,5aR,5bS,9S,13S,14R,16aS,16bR)- (9CI)  
(CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2-O-methyl-  
.alpha.-L-mannopyranosyl)oxy]-13-[[5-(dimethylamino)tetrahydro-6-methyl-2H-  
pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-  
tetradecahydro-14-methyl-, [2R-[2R\*,3aS\*,5aR\*,5bS\*,9S\*,13S\*(2R\*,5S\*,6R\*),1  
4R\*,16aS\*,16bR\*]]-

OTHER NAMES:

CN A 83543P

CN **Spinosyn P**

FS STEREOSEARCH

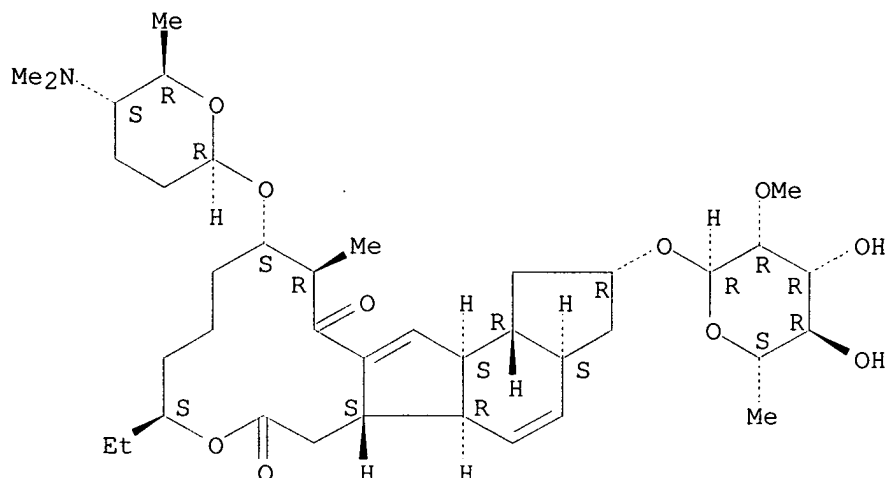
MF C39 H61 N O10

SR CA

LC STN Files: CA, CAPLUS, TOXLIT, USPATFULL

Absolute stereochemistry.





3 REFERENCES IN FILE CA (1967 TO DATE)  
3 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 8 OF 25 REGISTRY COPYRIGHT 1999 ACS

RN 159195-01-4 REGISTRY

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,3-di-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-4,14-dimethyl-, (2S,3aR,5aS,5bS,9S,13S,14R,16aS,16bS)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,3-di-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-4,14-dimethyl-, [2S-[2R\*,3aS\*,5aR\*,5bR\*,9R\*,13R\*(2S\*,5R\*,6S\*),14S\*,16aR\*,16bR\*]]-

OTHER NAMES:

CN A 835430

CN **Spinosyn O**

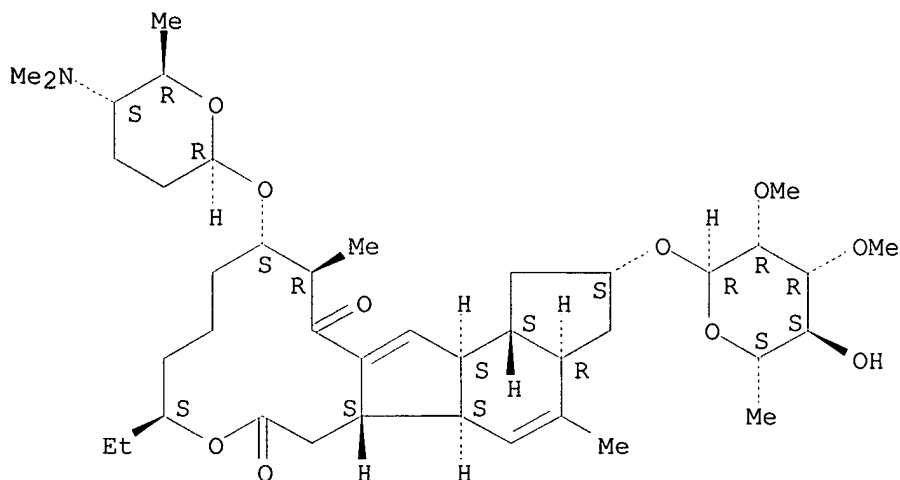
FS STEREOSEARCH

MF C41 H65 N O10

SR CA

LC STN Files: CA, CAPLUS, TOXLIT, USPATFULL

Absolute stereochemistry.



4 REFERENCES IN FILE CA (1967 TO DATE)

4 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 9 OF 25 REGISTRY COPYRIGHT 1999 ACS

RN 159195-00-3 REGISTRY

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,3-di-O-methyl-α-L-mannopyranosyl)oxy]-13-[[ (2R,5S,6R)-5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-14-methyl-, (2R,3aS,5aR,5bS,9S,13S,14R,16aS,16bR)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,3-di-O-methyl-α-L-mannopyranosyl)oxy]-13-[[5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-14-methyl-, [2R-[2R\*,3aS\*,5aR\*,5bS\*,9S\*,13S\*(2R\*,5S\*,6R\*),14R\*,16aS\*,16bR\*]]-

OTHER NAMES:

CN A 83543K

CN **Spinosyn K**

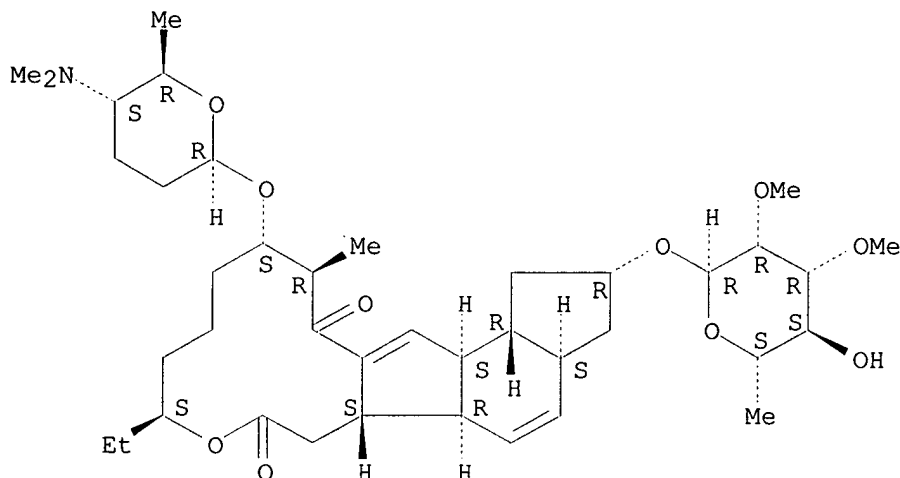
FS STEREOSEARCH

MF C40 H63 N O10

SR CA

LC STN Files: CA, CAPLUS, TOXLIT, USPATFULL

Absolute stereochemistry.



5 REFERENCES IN FILE CA (1967 TO DATE)

5 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 10 OF 25 REGISTRY COPYRIGHT 1999 ACS

RN 149466-03-5 REGISTRY

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-3,4-di-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[ (2R,5S,6R)-5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-9,14-dimethyl-, (2R,3aS,5aR,5bS,9S,13S,14R,16aS,16bR)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-3,4-di-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-9,14-dimethyl-, [2R-[2R\*,3aS\*,5aR\*,5bS\*,9S\*,13S\*(2R\*,5S\*,6R\*),14R\*,16aS\*,16bR\*]]-

OTHER NAMES:

CN A 83543S

CN **Spinosyn S**

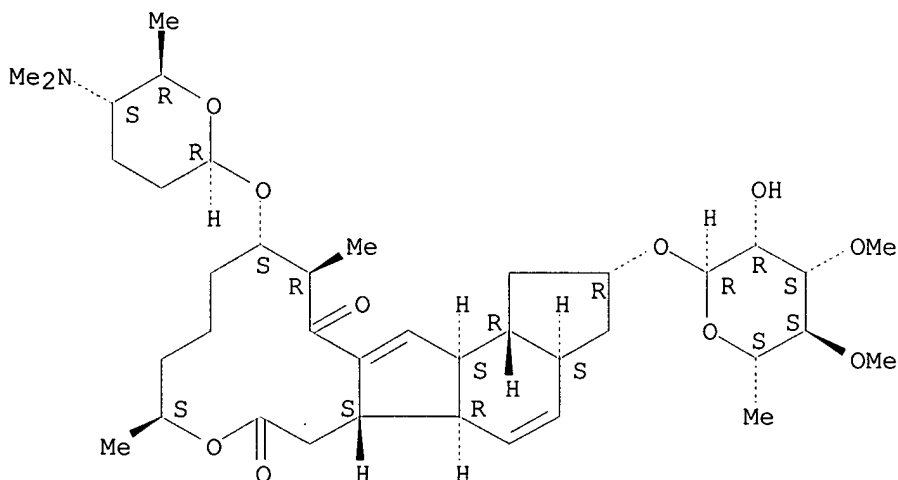
FS STEREOSEARCH

MF C39 H61 N O10

SR CA

LC STN Files: CA, CAPLUS, TOXLIT, USPATFULL

Absolute stereochemistry.



7 REFERENCES IN FILE CA (1967 TO DATE)

7 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 11 OF 25 REGISTRY COPYRIGHT 1999 ACS

RN 149438-30-2 REGISTRY

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-4-O-methyl-  
.alpha.-L-mannopyranosyl)oxy]-13-[[ (2R,5S,6R)-5-(dimethylamino)tetrahydro-  
6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16  
b-tetradecahydro-14-methyl-, (2R,3aS,5aR,5bS,9S,13S,14R,16aS,16bR)- (9CI)  
(CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-4-O-methyl-  
.alpha.-L-mannopyranosyl)oxy]-13-[[5-(dimethylamino)tetrahydro-6-methyl-2H-  
pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-  
tetradecahydro-14-methyl-, [2R-[2R\*,3aS\*,5aR\*,5bS\*,9S\*,13S\*(2R\*,5S\*,6R\*),1  
4R\*,16aS\*,16bR\*]]-

OTHER NAMES:

CN A 83543T

CN **Spinosyn T**

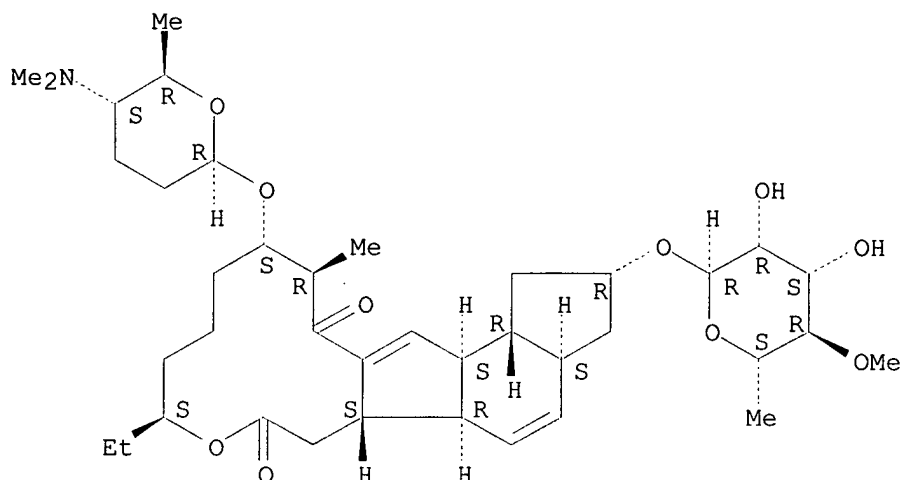
FS STEREOSEARCH

MF C39 H61 N O10

SR CA

LC STN Files: CA, CAPLUS, TOXLIT, USPATFULL

Absolute stereochemistry.



5 REFERENCES IN FILE CA (1967 TO DATE)  
5 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 12 OF 25 REGISTRY COPYRIGHT 1999 ACS

RN 149438-29-9 REGISTRY

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-3,4-di-O-methyl-α-L-mannopyranosyl)oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-14-methyl-13-[[[(2R,5S,6R)-tetrahydro-6-methyl-5-(methylamino)-2H-pyran-2-yl]oxy]-, (2R,3aS,5aR,5bS,9S,13S,14R,16aS,16bR)-(9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-3,4-di-O-methyl-α-L-mannopyranosyl)oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-14-methyl-13-[[tetrahydro-6-methyl-5-(methylamino)-2H-pyran-2-yl]oxy]-, [2R-[2R\*,3aS\*,5aR\*,5bS\*,9S\*,13S\*(2R\*,5S\*,6R\*),14R\*,16aS\*,16bR\*]]-

OTHER NAMES:

CN A 83543R

CN **Spinosyn R**

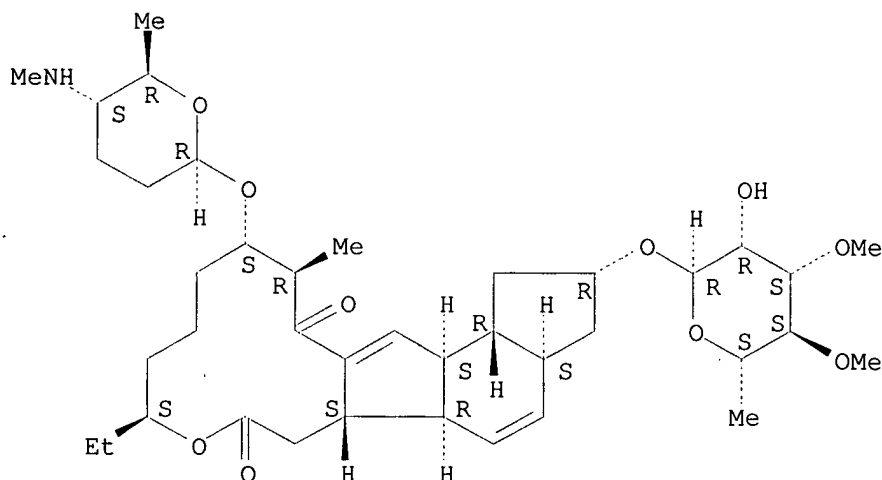
FS STEREOSEARCH

MF C39 H61 N O10

SR CA

LC STN Files: CA, CAPLUS, TOXLIT, USPATFULL

Absolute stereochemistry.



5 REFERENCES IN FILE CA (1967 TO DATE)

5 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 13 OF 25 REGISTRY COPYRIGHT 1999 ACS

RN 149438-28-8 REGISTRY

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-3,4-di-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[ (2R,5S,6R)-5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-4,14-dimethyl-, (2S,3aR,5aS,5bS,9S,13S,14R,16aS,16bS)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-3,4-di-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-4,14-dimethyl-, [2S-[2R\*,3aS\*,5aR\*,5bR\*,9R\*,13R\*(2S\*,5R\*,6S\*),14S\*,16aR\*,16bR\*]]-

OTHER NAMES:

CN A 83543Q

CN **Spinosyn Q**

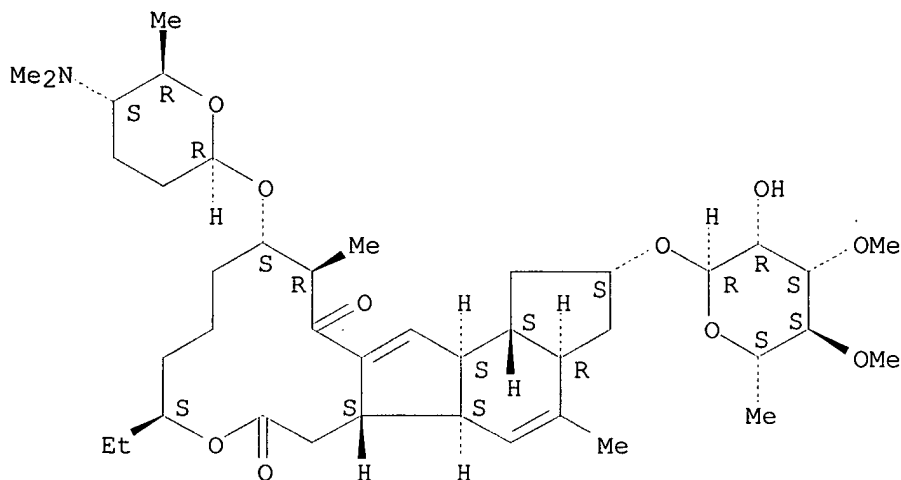
FS STEREOSEARCH

MF C41 H65 N O10

SR CA

LC STN Files: CA, CAPLUS, TOXLIT, USPATFULL

Absolute stereochemistry.



5 REFERENCES IN FILE CA (1967 TO DATE)

5 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 14 OF 25 REGISTRY COPYRIGHT 1999 ACS

RN 149092-03-5 REGISTRY

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,4-di-O-methyl- $\alpha$ -L-mannopyranosyl)oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-4,14-dimethyl-13-[[ (2R,5S,6R)-tetrahydro-6-methyl-5-(methylamino)-2H-pyran-2-yl]oxy]-, (2S,3aR,5aS,5bS,9S,13S,14R,16aS,16bS)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,4-di-O-methyl- $\alpha$ -L-mannopyranosyl)oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-4,14-dimethyl-13-[[tetrahydro-6-methyl-5-(methylamino)-2H-pyran-2-yl]oxy]-, [2S-[2R\*,3aS\*,5aR\*,5bR\*,9R\*,13R\*(2S\*,5R\*,6S\*),14S\*,16aR\*,16bR\*]]-

OTHER NAMES:

CN A 83543N

CN **Spinosyn N**

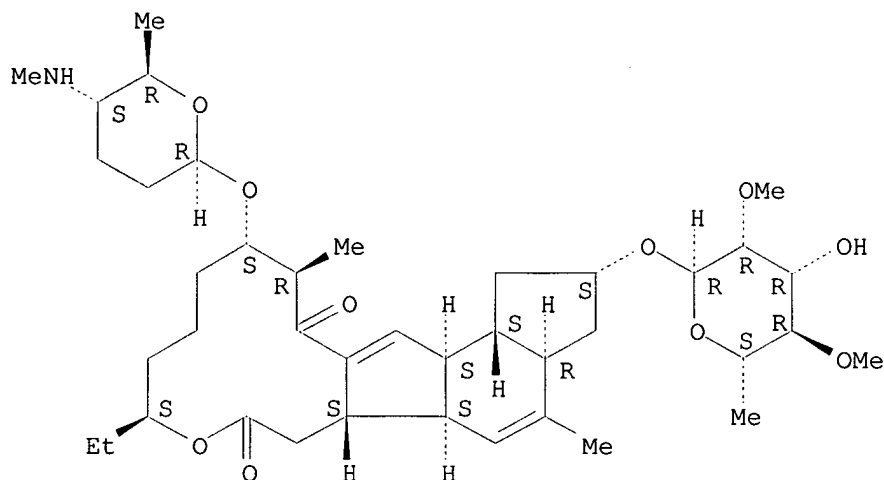
FS STEREOSEARCH

MF C40 H63 N O10

SR CA

LC STN Files: CA, CAPLUS, TOXLIT, USPATFULL

Absolute stereochemistry.



6 REFERENCES IN FILE CA (1967 TO DATE)

6 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 15 OF 25 REGISTRY COPYRIGHT 1999 ACS

RN 149092-02-4 REGISTRY

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,4-di-O-methyl-.alpha.-L-mannopyranosyl)oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-14-methyl-13-[[[(2R,5S,6R)-tetrahydro-6-methyl-5-(methylamino)-2H-pyran-2-yl]oxy]-, (2R,3aS,5aR,5bS,9S,13S,14R,16aS,16bR)-(9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,4-di-O-methyl-.alpha.-L-mannopyranosyl)oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-14-methyl-13-[[tetrahydro-6-methyl-5-(methylamino)-2H-pyran-2-yl]oxy]-, [2R-[2R\*,3aS\*,5aR\*,5bS\*,9S\*,13S\*(2R\*,5S\*,6R\*),14R\*,16aS\*,16bR\*]]-

OTHER NAMES:

CN A 83543M

CN **Spinosyn M**

FS STEREOSEARCH

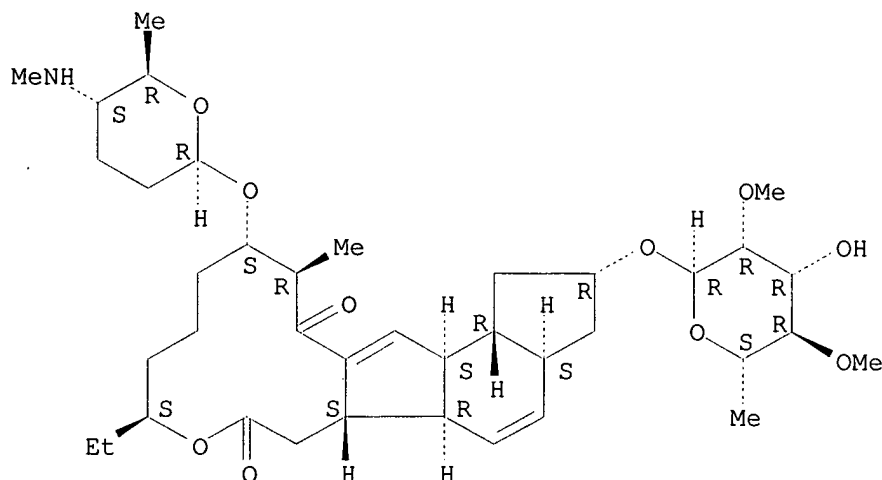
MF C39 H61 N O10

SR CA

LC STN Files: CA, CAPLUS, TOXLIT, USPATFULL

Absolute stereochemistry.





6 REFERENCES IN FILE CA (1967 TO DATE)  
6 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 16 OF 25 REGISTRY COPYRIGHT 1999 ACS

RN 149092-01-3 REGISTRY

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,4-di-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[ (2R,5S,6R)-5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-4,14-dimethyl-, (2S,3aR,5aS,5bS,9S,13S,14R,16aS,16bS)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,4-di-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-4,14-dimethyl-, [2S-[2R\*,3aS\*,5aR\*,5bR\*,9R\*,13R\*(2S\*,5R\*,6S\*),14S\*,16aR\*,16bR\*]]-

OTHER NAMES:

CN A 83543L

CN **Spinosyn L**

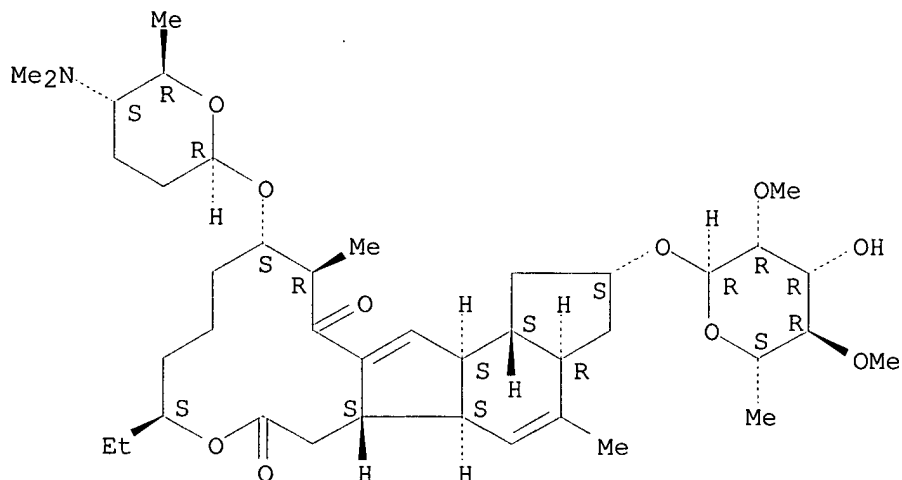
FS STEREOSEARCH

MF C41 H65 N O10

SR CA

LC STN Files: CA, CAPLUS, TOXLIT, USPATFULL

Absolute stereochemistry.



7 REFERENCES IN FILE CA (1967 TO DATE)  
7 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 17 OF 25 REGISTRY COPYRIGHT 1999 ACS

RN 132016-82-1 REGISTRY

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,3,4-tri-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[[(2R,5R,6R)-5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-14-methyl-, (2R,3aS,5aR,5bS,9S,13S,14R,16aS,16bR)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,3,4-tri-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[[5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-14-methyl-, [2R-[2R\*,3aS\*,5aR\*,5bS\*,9S\*,13S\*(2R\*,5R\*,6R\*),14R\*,16aS\*,16bR\*]]-

OTHER NAMES:

CN A 83543G

CN **Spinosyn G**

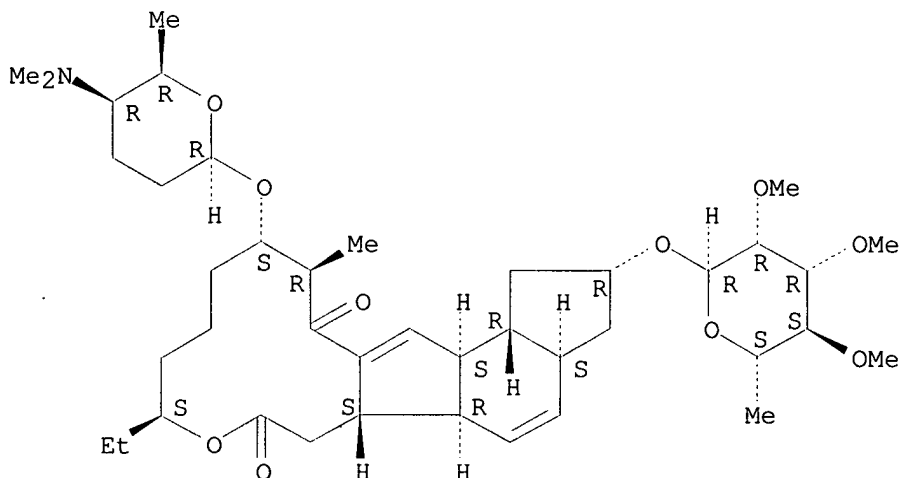
FS STEREOSEARCH

MF C41 H65 N O10

SR CA

LC STN Files: CA, CAPLUS, CHEMINFORMRX, TOXLIT, USPATFULL

Absolute stereochemistry.



8 REFERENCES IN FILE CA (1967 TO DATE)

8 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 18 OF 25 REGISTRY COPYRIGHT 1999 ACS

RN 131929-67-4 REGISTRY

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,4-di-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[ (2R,5S,6R)-5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-14-methyl-, (2R,3aS,5aR,5bS,9S,13S,14R,16aS,16bR)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,4-di-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-14-methyl-, [2R-[2R\*,3aS\*,5aR\*,5bS\*,9S\*,13S\*(2R\*,5S\*,6R\*),14R\*,16aS\*,16bR\*]]-

OTHER NAMES:

CN A 83543J

CN **Spinosyn J**

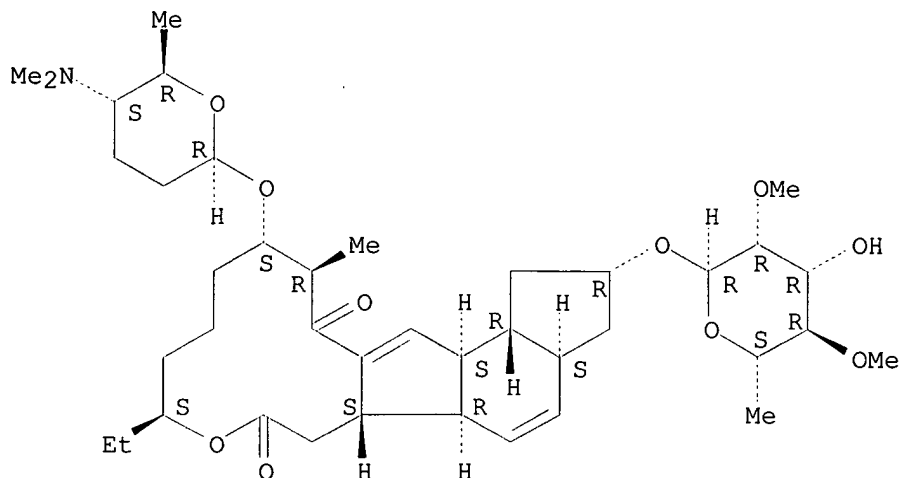
FS STEREOSEARCH

MF C40 H63 N O10

SR CA

LC STN Files: AGRICOLA, CA, CAPLUS, TOXLIT, USPATFULL

Absolute stereochemistry.



10 REFERENCES IN FILE CA (1967 TO DATE)

10 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 19 OF 25 REGISTRY COPYRIGHT 1999 ACS

RN 131929-66-3 REGISTRY

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-3,4-di-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[ (2R,5S,6R)-5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-14-methyl-, (2R,3aS,5aR,5bS,9S,13S,14R,16aS,16bR)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-3,4-di-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-14-methyl-, [2R-[2R\*,3aS\*,5aR\*,5bS\*,9S\*,13S\*(2R\*,5S\*,6R\*),14R\*,16aS\*,16bR\*]]-

OTHER NAMES:

CN A 83543H

CN **Spinosyn H**

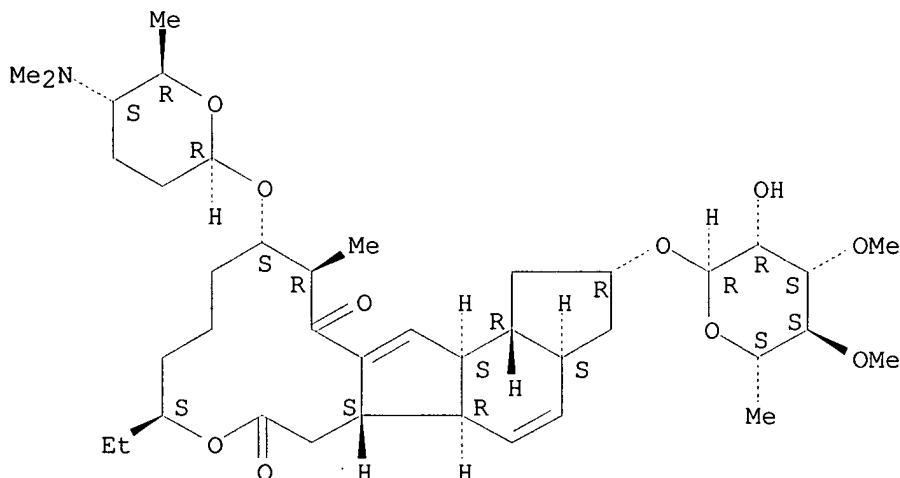
FS STEREOSEARCH

MF C40 H63 N O10

SR CA

LC STN Files: CA, CAPLUS, TOXLIT, USPATFULL

Absolute stereochemistry.



7 REFERENCES IN FILE CA (1967 TO DATE)

7 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 20 OF 25 REGISTRY COPYRIGHT 1999 ACS

RN 131929-65-2 REGISTRY

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,3,4-tri-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[ (2R,5S,6R)-5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-, (2R,3aS,5aR,5bS,9S,13S,16aS,16bR)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,3,4-tri-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-, [2R-[2R\*,3aS\*,5aR\*,5bS\*,9S\*,13S\*(2R\*,5S\*,6R\*),16aS\*,16bR\*]]-

OTHER NAMES:

CN A 83543F

CN **Spinosyn F**

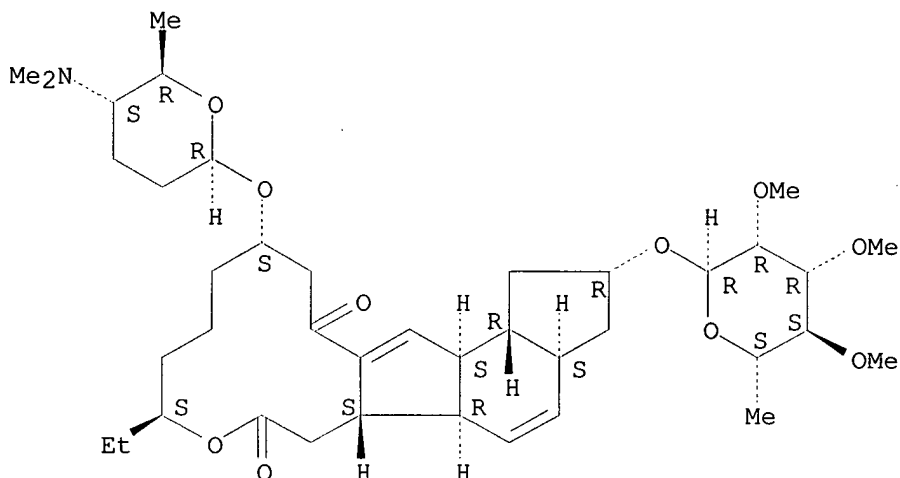
FS STEREOSEARCH

MF C40 H63 N O10

SR CA

LC STN Files: CA, CAPLUS, TOXLIT, USPATFULL

Absolute stereochemistry.



9 REFERENCES IN FILE CA (1967 TO DATE)

9 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 21 OF 25 REGISTRY COPYRIGHT 1999 ACS

RN 131929-64-1 REGISTRY

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,3,4-tri-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[ (2R,5S,6R)-5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-9,14-dimethyl-, (2R,3aS,5aR,5bS,9S,13S,14R,16aS,16bR)- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,3,4-tri-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-9,14-dimethyl-, [2R-[2R\*,3aS\*,5aR\*,5bS\*,9S\*,13S\*(2R\*,5S\*,6R\*),14R\*,16aS\*,16bR\*]]-

OTHER NAMES:

CN A 83543E

CN **Spinosyn E**

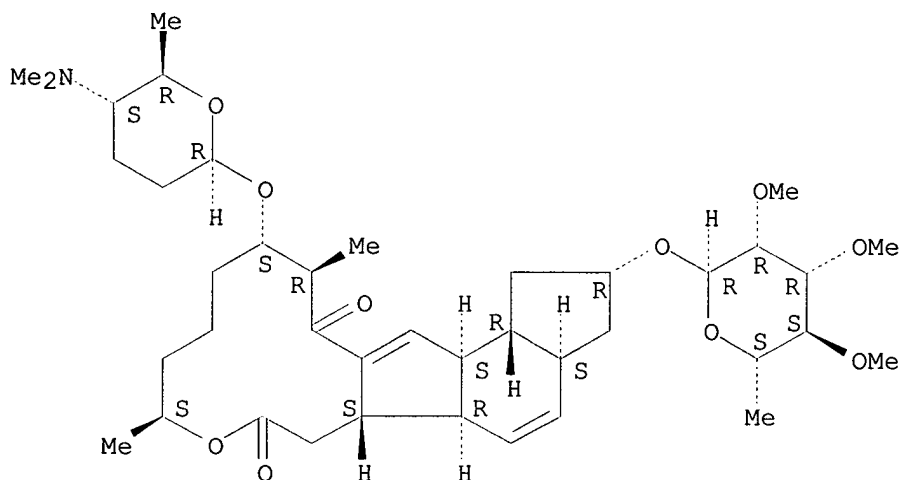
FS STEREOSEARCH

MF C40 H63 N O10

SR CA

LC STN Files: CA, CAPLUS, TOXLIT, USPATFULL

Absolute stereochemistry.



9 REFERENCES IN FILE CA (1967 TO DATE)

9 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 22 OF 25 REGISTRY COPYRIGHT 1999 ACS

RN 131929-63-0 REGISTRY

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,3,4-tri-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[ (2R,5S,6R)-5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-4,14-dimethyl-, (2S,3aR,5aS,5bS,9S,13S,14R,16aS,16bS)- (9CI) (CA INDEX NAME)

OTHER NAMES:

CN A 83543D

CN **Spinosyn D**

FS STEREOSEARCH

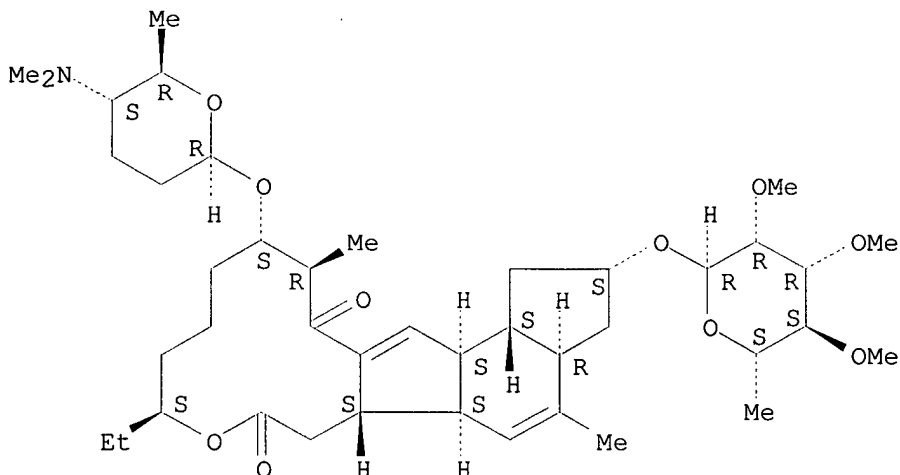
MF C42 H67 N O10

CI COM

SR CA

LC STN Files: AGRICOLA, ANABSTR, BIOSIS, CA, CAPLUS, CEN, PROMT, TOXLINE, TOXLIT, USPATFULL

Absolute stereochemistry.



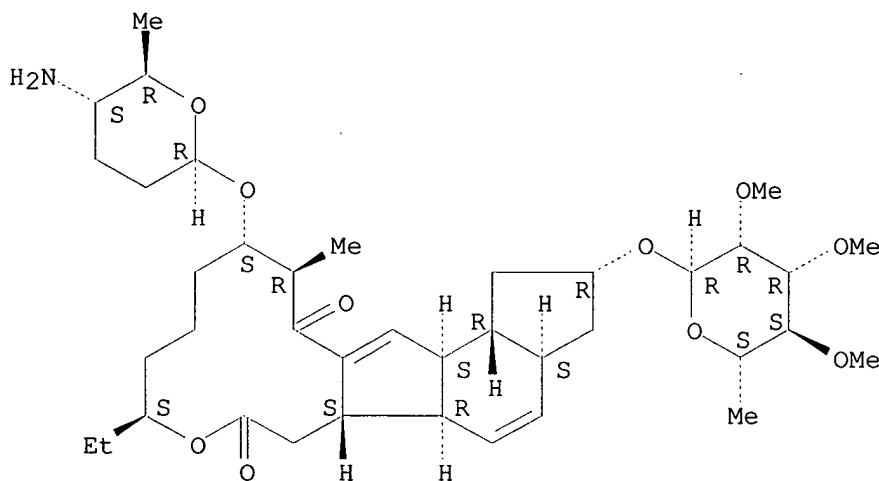
22 REFERENCES IN FILE CA (1967 TO DATE)

KATHLEEN FULLER STIC LIBRARY 308-4290

## 22 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 23 OF 25 REGISTRY COPYRIGHT 1999 ACS  
 RN 131929-62-9 REGISTRY  
 CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 13-[[ (2R,5S,6R)-5-aminotetrahydro-6-methyl-2H-pyran-2-yl]oxy]-2-[(6-deoxy-2,3,4-tri-O-methyl-.alpha.-L-mannopyranosyl)oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-14-methyl-, (2R,3aS,5aR,5bS,9S,13S,14R,16aS,16bR)-(9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 13-[(5-aminotetrahydro-6-methyl-2H-pyran-2-yl)oxy]-2-[(6-deoxy-2,3,4-tri-O-methyl-.alpha.-L-mannopyranosyl)oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-14-methyl-, [2R-[2R\*,3aS\*,5aR\*,5bS\*,9S\*,13S\*(2R\*,5S\*,6R\*),14R\*,16aS\*,16bR\*]]-  
 OTHER NAMES:  
 CN A 83543C  
 CN **Spinosyn C**  
 FS STEREOSEARCH  
 MF C39 H61 N O10  
 SR CA  
 LC STN Files: BEILSTEIN\*, CA, CAPLUS, TOXLIT, USPATFULL  
 (\*File contains numerically searchable property data)

Absolute stereochemistry.



9 REFERENCES IN FILE CA (1967 TO DATE)  
 9 REFERENCES IN FILE CAPLUS (1967 TO DATE)

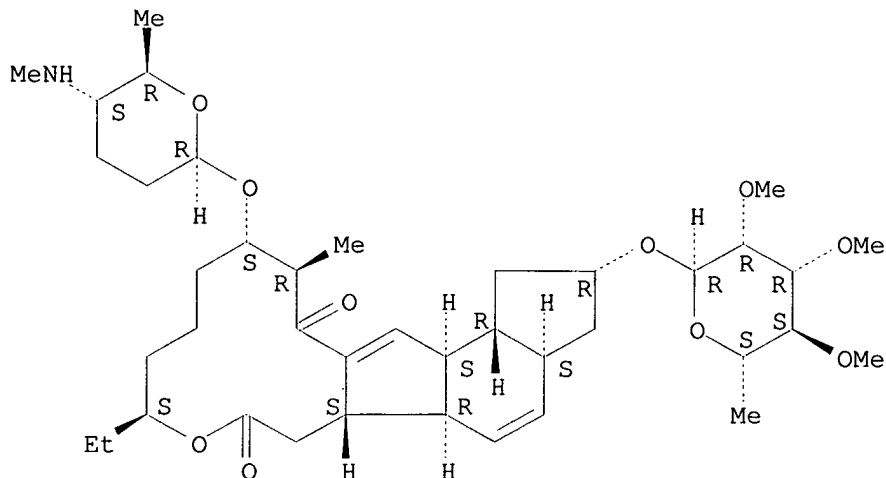
L1 ANSWER 24 OF 25 REGISTRY COPYRIGHT 1999 ACS  
 RN 131929-61-8 REGISTRY  
 CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,3,4-tri-O-methyl-.alpha.-L-mannopyranosyl)oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-14-methyl-13-[[ (2R,5S,6R)-tetrahydro-6-methyl-5-(methylamino)-2H-pyran-2-yl]oxy]-, (2R,3aS,5aR,5bS,9S,13S,14R,16aS,16bR)-(9CI) (CA INDEX NAME)  
 OTHER NAMES:  
 CN A 83543B  
 CN **Spinosyn B**  
 FS STEREOSEARCH  
 MF C40 H63 N O10  
 SR CA  
 LC STN Files: AGRICOLA, BEILSTEIN\*, BIOBUSINESS, CA, CAPLUS, TOXLIT, KATHLEEN FULLER STIC LIBRARY 308-4290



USPATFULL

(\*File contains numerically searchable property data)

Absolute stereochemistry.



14 REFERENCES IN FILE CA (1967 TO DATE)

14 REFERENCES IN FILE CAPLUS (1967 TO DATE)

L1 ANSWER 25 OF 25 REGISTRY COPYRIGHT 1999 ACS

RN 131929-60-7 REGISTRY

CN 1H-as-Indaceno[3,2-d]oxacyclododecin-7,15-dione, 2-[(6-deoxy-2,3,4-tri-O-methyl-.alpha.-L-mannopyranosyl)oxy]-13-[[ (2R,5S,6R)-5-(dimethylamino)tetrahydro-6-methyl-2H-pyran-2-yl]oxy]-9-ethyl-2,3,3a,5a,5b,6,9,10,11,12,13,14,16a,16b-tetradecahydro-14-methyl-, (2R,3aS,5aR,5bS,9S,13S,14R,16aS,16bR)- (9CI) (CA INDEX NAME)

OTHER NAMES:

CN A 83543A

CN Lepicidin A

CN **Spinosyn A**

FS STEREOSEARCH

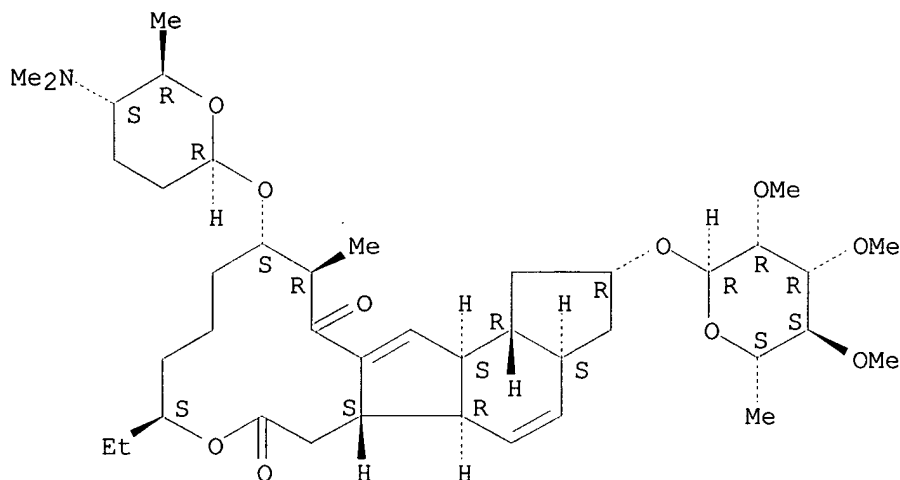
MF C41 H65 N O10

CI COM

SR CA

LC STN Files: AGRICOLA, ANABSTR, BIOSIS, CA, CAPLUS, CASREACT, CEN, CHEMINFORMRX, PROMT, RTECS\*, TOXLINE, TOXLIT, USPATFULL  
(\*File contains numerically searchable property data)

Absolute stereochemistry. Rotation (-).



30 REFERENCES IN FILE CA (1967 TO DATE)  
 1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 30 REFERENCES IN FILE CAPLUS (1967 TO DATE)

=> file hcaplus

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=> d que 12

L1 25 SEA FILE=REGISTRY ABB=ON SPINOSYN ?/CN  
 L2 34 SEA FILE=HCAPLUS ABB=ON L1

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=> d que 15

L5 1 SEA FILE=WPIDS ABB=ON SPINOSYN

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MEDLINE has been reloaded to reflect the annual MeSH changes made by  
the National Library of Medicine for 1999. Enter HELP RLOAD for details.

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Medicus (CIM), has been added to MEDLINE. See HELP CONTENT for details.

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Basic Index. See HELP SFIELDS for details.

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SUBSTANCE IDENTIFICATION.

=> d que 16

L1 25 SEA FILE=REGISTRY ABB=ON SPINOSYN ?/CN  
L6 1 SEA FILE=MEDLINE ABB=ON L1 OR SPINOSYN

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FILE COVERS 1974 TO 15 Jul 1999 (19990715/ED)

EMBASE has been reloaded. Enter HELP RLOAD for details.

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

=> d que 17

L1 25 SEA FILE=REGISTRY ABB=ON SPINOSYN ?/CN  
L7 5 SEA FILE=EMBASE ABB=ON L1 OR SPINOSYN

=> file biosis

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CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT  
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 15 July 1999 (19990715/ED)

The BIOSIS file has been reloaded. Enter HELP RLOAD and HELP REINDEXING for details.

=> d que 110

L1 25 SEA FILE=REGISTRY ABB=ON SPINOSYN ?/CN  
L8 30 SEA FILE=BIOSIS ABB=ON L1 OR SPINOSYN  
L10 27 SEA FILE=BIOSIS ABB=ON L8 AND INSECT?

=> dup rem 12 15 16 17 110

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PROCESSING COMPLETED FOR L6  
PROCESSING COMPLETED FOR L7  
PROCESSING COMPLETED FOR L10  
L12 52 DUP REM L2 L5 L6 L7 L10 (16 DUPLICATES REMOVED)

=> d 112 1-52 all

L12 ANSWER 1 OF 52 HCAPLUS COPYRIGHT 1999 ACS  
AN 1999:334601 HCAPLUS  
DN 131:55084  
TI Fluorescent excitation transfer immunoassay for the determination of  
spinosyn A in water  
AU Lee, Myoyong; Walt, David R.; Nugent, Patricia  
CS Max Tishler Laboratory for Organic Chemistry Department of Chemistry,  
Tufts University, Medford, MA, 02155, USA  
SO J. Agric. Food Chem. (1999), 47(7), 2766-2770  
CODEN: JAFCAU; ISSN: 0021-8561  
PB American Chemical Society  
DT Journal  
LA English  
CC 5-1 (Agrochemical Bioregulators)  
Section cross-reference(s): 15, 61  
AB A fluorescent excitation transfer immunoassay for spinosyn A has been  
developed and applied to the anal. of tap water and wastewater effluent  
from manufg. plants. Fluorescein (F) and tetramethylrhodamine (TMR) were  
chosen as donor and quencher, resp., for the excitation transfer.  
Fluorescence quenching was obsd. from the binding of F-labeled antigen to  
TMR-labeled antibody. By employing nonlabeled antigen in a competitive  
immunoassay format, we reversed fluorescence quenching. The assay  
provides a limit of detection of 0.01 ppb and a working range of 0.05-1  
ppb and allows for the rapid detn. of spinosyn A in water with recovery  
values ranging from 96% to 120%. With the exploitation of the small size  
of optical fibers, fluorescence from an assay vol. of 24 .mu.L could be

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measured without special vessels.

ST fluorescence immunoassay spinosyn A water

IT Fluorescence immunoassay  
Waters  
(fluorescent excitation transfer immunoassay for the detn. of spinosyn A in water)

IT 131929-60-7, Spinosyn A  
RL: ANT (Analyte); ANST (Analytical study)  
(fluorescent excitation transfer immunoassay for the detn. of spinosyn A in water)

L12 ANSWER 2 OF 52 BIOSIS COPYRIGHT 1999 BIOSIS

AN 1999:270062 BIOSIS

DN PREV199900270062

TI Ligands of the nicotinic acetylcholine receptor as **insecticides**.

AU Nauen, Ralf (1); Ebbinghaus, Ulrich; Tietjen, Klaus

CS (1) Agrochemicals Division, Research, Bayer AG, D-51368, Leverkusen Germany

SO Pesticide Science, (May, 1999) Vol. 55, No. 5, pp. 608-610.  
ISSN: 0031-613X.

DT Article

LA English

SL English

AB **Insect** nicotinic acetyl receptors (nAChR) are targets of growing importance and, since the early 1990s, the number of such highly effective **insecticides** as imidacloprid and **spinosyn** has grown. Several natural compounds, eg dihydro-beta-erythroidine, methyl caconitine and paraherquamide, showing high affinity to the same receptor, were considerably less active as **insecticides**, most likely because of their antagonistic action. Our observations on aphids after ingestion of the antagonistic compound dihydro-beta-erythroidine revealed anti-feedant-like properties. As a consequence, the symptomology of poisoning was totally different between agonists and antagonists of the nAChR. Electrophysiological (whole-cell voltage clamp) measurements in isolated housefly neurones revealed that agonism seems to be a prerequisite for **insecticidal** activity. Furthermore, we were able to demonstrate the existence of two different subtypes of the nAChR in isolated locust neurones with different pharmacology and ion-channel properties.

CC Economic Entomology - Chemical and Physical Control, General; Apparatus \*60016  
Biophysics - Molecular Properties and Macromolecules \*10506  
Pest Control, General; Pesticides; Herbicides \*54600

BC Diptera 75314  
Homoptera 75324  
Orthoptera 75340

IT Major Concepts  
Pest Assessment Control and Management; Pesticides

IT Chemicals & Biochemicals  
acetamiprid: **insecticide**; dihydro-beta-erythroidine: **insecticide**; imidacloprid: **insecticide**; methyl caconitine: **insecticide**; nicotinic acetylcholine receptor: **insecticide** target; nitenpyram: **insecticide**; paraherquamide: **insecticide**

IT Methods & Equipment  
whole-cell voltage clamp method: physiological method

ORGN Super Taxa  
Diptera: **Insecta**, Arthropoda, Invertebrata, Animalia;  
Homoptera: **Insecta**, Arthropoda, Invertebrata, Animalia;  
Orthoptera: **Insecta**, Arthropoda, Invertebrata, Animalia

ORGN Organism Name  
Locusta migratoria (Orthoptera): pest, test organism; Musca domestica (Diptera): pest, test organism; Myzus persicae (Homoptera): pest, test organism

## ORGN Organism Superterms

Animals; Arthropods; **Insects**; Invertebrates

RN 51-84-3 (ACETYLCHOLINE)  
23255-54-1 (DIHYDRO-BETA-ERYTHROIDINE)  
77392-58-6 (PARAHERQUAMIDE)  
138261-41-3 (IMIDACLOPRID)  
160430-64-8 (ACETAMIPRID)  
150824-47-8 (NITENPYRAM)

L12 ANSWER 3 OF 52 BIOSIS COPYRIGHT 1999 BIOSIS

AN 1999:167093 BIOSIS

DN PREV199900167093

TI Chemical and microbial modifications of **spinosyn**: Exploring the synergic between fermentation microbiology and organic chemistry.

AU Kirst, H. A. (1); Creemer, L. C. (1); Broughton, M. C.; Huber, M. L. B.; Turner, J. R.

CS (1) Elanco Anim. Health R and D, 2001 W. Main St., Greenfield, IN 46140-0708 USA

SO Abstracts of Papers American Chemical Society, (1999) Vol. 217, No. 1-2, pp. AGRO 40.

Meeting Info.: 217th National Meeting of the American Chemical Society  
Anaheim, California, USA March 21-25, 1999 American Chemical Society  
. ISSN: 0065-7727.

DT Conference

LA English

CC Pest Control, General; Pesticides; Herbicides \*54600

Biochemical Studies - General \*10060

Metabolism - General Metabolism; Metabolic Pathways \*13002

Bacteriology, General and Systematic \*30000

Food and Industrial Microbiology - General and Miscellaneous \*39008

General Biology - Symposia, Transactions and Proceedings of Conferences,  
Congresses, Review Annuals \*00520

BC Pseudonocardiaceae 08812

IT Major Concepts

Bioprocess Engineering; Pesticides

IT Chemicals &amp; Biochemicals

aglycone; rhamnose; spinosyns: analogs, biosynthesis,

**insecticide**; sugars

IT Miscellaneous Descriptors

methylation; Meeting Abstract

ORGN Super Taxa

Pseudonocardiaceae: Nocardioform Actinomycetes, Actinomycetes and  
Related Organisms, Eubacteria, Bacteria, Microorganisms

ORGN Organism Name

Saccharopolyspora spinosa (Pseudonocardiaceae)

ORGN Organism Superterms

Bacteria; Eubacteria; Microorganisms

RN 3615-41-6 (RHAMNOSE)

L12 ANSWER 4 OF 52 HCAPLUS COPYRIGHT 1999 ACS

DUPLICATE 1

AN 1998:678116 HCAPLUS

DN 130:24220

TI Determination of Spinosad and Its Metabolites in Meat, Milk, Cream, and Eggs by High-Performance Liquid Chromatography with Ultraviolet Detection

AU West, Sheldon D.; Turner, Larry G.

CS Global Environmental Chemistry Laboratory Indianapolis Laboratory, Dow AgroSciences, Indianapolis, IN, 46268-1054, USA

SO J. Agric. Food Chem. (1998), 46(11), 4620-4627

CODEN: JAFCAU; ISSN: 0021-8561

PB American Chemical Society

DT Journal

LA English

CC 17-1 (Food and Feed Chemistry)

AB Spinosad is a naturally derived insect-control agent for use on cotton and

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a variety of other crops. A method is described for the detn. of spinosad and its major metabolites in beef and poultry meat, milk, cream, and eggs. The method detn. residues of the active ingredients (spinosyns A and D) and 2 metabolites (spinosyn B and N-demethylspinosyn D). For chicken fat, the method has a limit of quantitation (LOQ) of 0.02  $\mu\text{g/g}$  and a limit of detection (LOD) of 0.006  $\mu\text{g/g}$ . For all other chicken tissues, beef tissues, milk, cream, and eggs, the method has an LOQ of 0.01  $\mu\text{g/g}$  and an LOD of 0.003  $\mu\text{g/g}$ . The analytes are extd. from the various sample types using appropriate solvents, and the exts. are purified by liq.-liq. partitioning and solid-phase extn. All 4 analytes are detd. simultaneously in the purified exts. by reversed-phase HPLC with UV detection at 250 nm.

ST spinosad metabolite detn food HPLC UV; liq chromatog spinosad metabolite  
IT Reversed phase HPLC

(UV detection; detn. of spinosad and metabolites in meat, milk, cream, and eggs by high-performance liq. chromatog. with UV detection)

IT Beef  
Dairy products  
Eggs (food)  
Food analysis  
Food contamination  
Milk analysis  
Poultry (meat)

(detn. of spinosad and metabolites in meat, milk, cream, and eggs by high-performance liq. chromatog. with UV detection)

IT Chicken fat  
RL: AMX (Analytical matrix); ANST (Analytical study)  
(detn. of spinosad and metabolites in meat, milk, cream, and eggs by high-performance liq. chromatog. with UV detection)

IT 131929-60-7, Spinosyn A 131929-61-8, Spinosyn B  
131929-63-0, Spinosyn D 149439-70-3, N-Demethylspinosyn D  
168316-95-8, Spinosad

RL: ANT (Analyte); POL (Pollutant); PRP (Properties); ANST (Analytical study); OCCU (Occurrence)  
(detn. of spinosad and metabolites in meat, milk, cream, and eggs by high-performance liq. chromatog. with UV detection)

L12 ANSWER 5 OF 52 HCAPLUS COPYRIGHT 1999 ACS DUPLICATE 2

AN 1998:150316 HCAPLUS

DN 128:230588

TI Total Synthesis of Spinosyn A. 2. Degradation Studies Involving the Pure Factor and Its Complete Reconstitution

AU Paquette, Leo A.; Collado, Ivan; Purdie, Mark

CS Evans Chemical Laboratories, Ohio State University, Columbus, OH, 43210, USA

SO J. Am. Chem. Soc. (1998), 120(11), 2553-2562

CODEN: JACSAT; ISSN: 0002-7863

PB American Chemical Society

DT Journal

LA English

CC 33-7 (Carbohydrates)

AB A total synthesis of natural levorotatory spinosyn A has been achieved. In the reconstruction phase, a Pd-catalyzed coupling of a vinylstannane with an acid chloride reestablished the great majority of the structure in an enantiocontrolled manner. Once macrolactonization had been effected, the 2,3,4-tri-O-methylrhamnose unit was introduced first with exceptionally good stereocontrol. The final glycosidation, which involved a 2-mercaptopyrimidine deriv. of D-forosamine, was met with an expectedly diminished percentage of the desired  $\beta$ -anomer.

ST aminodeoxy glycoside total synthesis; spinosyn A total synthesis

IT 661-69-8 4136-95-2 6026-86-4 51364-51-3 89028-40-0 142035-26-5  
145100-51-2 155189-82-5 204381-40-8 204381-46-4

RL: RCT (Reactant)

(total synthesis of spinosyn A via degrdn. studies involving the pure

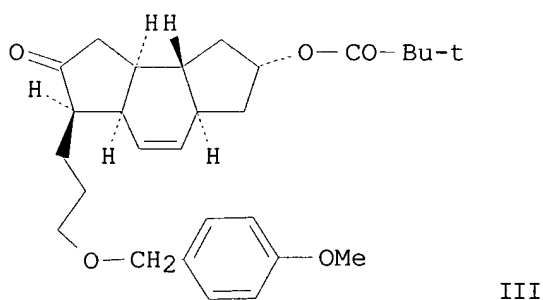
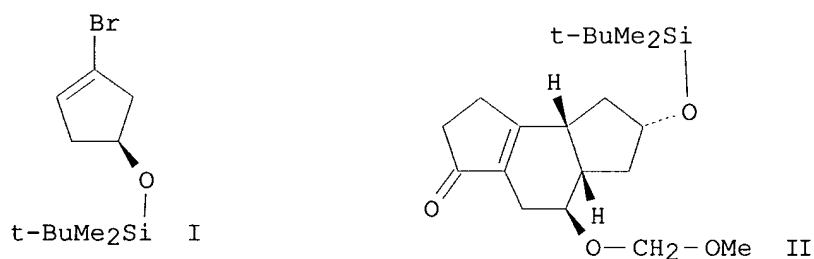
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factor and its complete reconstitution)

IT 118545-01-0P **131929-60-7P**, Spinosyn A 131929-68-5P  
 155189-84-7P 187169-86-4P 204381-17-9P 204381-18-0P 204381-19-1P  
 204381-20-4P 204381-21-5P 204381-22-6P 204381-23-7P 204381-24-8P  
 204381-25-9P 204381-26-0P 204381-27-1P 204381-28-2P 204381-29-3P  
 204381-30-6P 204381-31-7P 204381-32-8P 204381-33-9P 204381-34-0P  
 204381-35-1P 204381-36-2P 204381-37-3P 204381-38-4P 204381-39-5P  
 204381-41-9P 204381-42-0P 204381-43-1P 204381-44-2P 204381-45-3P  
 204381-47-5P 204381-48-6P 204519-32-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
 (total synthesis of spinosyn A via degrading studies involving the pure factor and its complete reconstitution)

L12 ANSWER 6 OF 52 HCAPLUS COPYRIGHT 1999 ACS DUPLICATE 3  
 AN 1998:150315 HCAPLUS  
 DN 128:217572  
 TI Total Synthesis of Spinosyn A. 1. Enantioselective Construction of a Key Tricyclic Intermediate by a Multiple Configurational Inversion Scheme  
 AU Paquette, Leo A.; Gao, Zhongli; Ni, Zhijie; Smith, Graham F.  
 CS Evans Chemical Laboratories, Ohio State University, Columbus, OH, 43210, USA  
 SO J. Am. Chem. Soc. (1998), 120(11), 2543-2552  
 CODEN: JACSAT; ISSN: 0002-7863  
 PB American Chemical Society  
 DT Journal  
 LA English  
 CC 33-7 (Carbohydrates)  
 GI



AB The condensation of (+)-7,7-dimethoxynorbornen-2-one with the cerium reagent derived from enantiopure bromide I gives rise to an exo carbinol, which readily undergoes highly stereocontrolled anionic oxy-Cope rearrangement. Conversion of the resulting ketone into II proceeds with clean epimerization at C-11 (spinosyn numbering) to properly set the absolute configuration at that site. Redn. of II with lithium in liq. ammonia serves to introduce two additional stereogenic centers of the perhydro-as-indacene core. In addition, the protocol makes possible the

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convenient incorporation of a functionalized two-carbon appendage at C-3 and ultimate generation of a cyclohexene double bond after stereochem. inversion at C-7. This scheme leads to III, a tricyclic compd. subsequently shown to be an advanced precursor to the powerful insecticide spinosyn A.

ST epimerization condensation spinosyn A tricyclic prepn; spinosyn A tricyclic prepn cope rearrangement

IT Condensation reaction

Epimerization

(enantioselective construction of a key tricyclic ketone synthon of spinosyn A)

IT Cope rearrangement

(oxy-Cope rearrangement; enantioselective construction of a key tricyclic ketone synthon of spinosyn A)

IT 131929-60-7P, Spinosyn A

RL: PNU (Preparation, unclassified); PREP (Preparation)

(enantioselective construction of a key tricyclic ketone synthon of spinosyn A)

IT 5927-18-4 33993-53-2 51901-85-0 61305-35-9 123347-37-5  
188910-44-3

RL: RCT (Reactant)

(enantioselective construction of a key tricyclic ketone synthon of spinosyn A)

IT 64145-56-8P 188910-40-9P 188910-48-7P 188910-52-3P 188910-56-7P  
188910-60-3P 188910-62-5P 188910-64-7P 188910-68-1P 188910-71-6P  
188910-72-7P 188910-76-1P 188910-80-7P 188910-81-8P 188910-82-9P  
188910-83-0P 188910-85-2P 188910-86-3P 204378-44-9P 204378-45-0P  
204378-46-1P 204378-47-2P 204378-48-3P 204378-49-4P 204378-51-8P  
204378-53-0P 204378-54-1P 204378-55-2P 204378-56-3P 204378-57-4P  
204378-58-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)

(enantioselective construction of a key tricyclic ketone synthon of spinosyn A)

IT 204378-50-7P 204378-52-9P

RL: SPN (Synthetic preparation); PREP (Preparation)

(enantioselective construction of a key tricyclic ketone synthon of spinosyn A)

L12 ANSWER 7 OF 52 HCAPLUS COPYRIGHT 1999 ACS DUPLICATE 4

AN 1999:36439 HCAPLUS

DN 130:193066

TI Biological activity of the spinosyns, new fermentation derived insect control agents, on tobacco budworm (Lepidoptera: Noctuidae) larvae

AU Sparks, Thomas C.; Thompson, Gary D.; Kirst, Herbert A.; Hertlein, Mark B.; Larson, Larry L.; Worden, Thomas V.; Thibault, Stephen T.

CS Dow AgroSciences, Discovery and Field Research, Indianapolis, IN, USA

SO J. Econ. Entomol. (1998), 91(6), 1277-1283

CODEN: JEENAI; ISSN: 0022-0493

PB Entomological Society of America

DT Journal

LA English

CC 5-4 (Agrochemical Bioregulators)

AB The spinosyns are a new class of fermn.-derived tetracyclic-macrolide insect control agents that are active against lepidopterous pests such as the tobacco budworm, *Heliothis virescens* (F.). Nine spinosyns, 2 pseudoaglycones (each lacking 1 of the sugar moieties), and the aglycon (lacking both sugar moieties) were tested on neonate *H. virescens* larvae in a drench assay. Spinosyn A, the principal component of spinosad, was the most active of the spinosyns examd. (spinosyn A LC50 = 0.3 ppm) and was as active as cypermethrin (LC50 = 0.26 ppm). Spinosyn A was also tested directly against cypermethrin in a further series of lab. efficacy assays. Although spinosyn A (LD50 = 1.28, 2.25 .mu.g/g) was significantly less active than cypermethrin (LD50 = 0.52 .mu.g/g) in topical bioassays against 3rd-instar *H. virescens*, the results show spinosyn A to be in the

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activity range of some pyrethroids and more active than a variety of other insect control agents. Spinosyn A and cypermethrin exhibited a rapid knockdown of 3rd instar *H. virescens* larvae with T50s (time to 50% knockdown) at 10 .mu.g per larva of 81 min and 25 min, resp. Spinosyn A was significantly less active than cypermethrin in a dried residue contact bioassay, but equiv. (no significant differences) in activity to cypermethrin in diet/egg and leaf-spray bioassays, and significantly more active than cypermethrin in a leaf-dip bioassay. Thus, spinosyn A demonstrates that natural products can provide efficacy against pest lepidopterous larvae, such as *H. virescens*, that is on par with that obsd. for some of the most active synthetic insect control agents, including many pyrethroids.

ST insecticide spinosyn *Heliothis*

IT *Heliothis virescens*

Insecticides

(insecticidal activity of spinosyns on tobacco budworm larvae)

IT 131929-60-7, Spinosyn A 131929-61-8, Spinosyn B

131929-62-9, Spinosyn C 131929-63-0, Spinosyn D

131929-64-1, Spinosyn E 131929-65-2, Spinosyn F

131929-66-3, Spinosyn H 131929-67-4, Spinosyn J

131929-68-5 132016-82-1, Spinosyn G 149439-75-8

149466-03-5, Spinosyns, 149560-97-4

RL: AGR (Agricultural use); BIOL (Biological study); USES (Uses)

(insecticidal activity on tobacco budworm larvae)

L12 ANSWER 8 OF 52 HCAPLUS COPYRIGHT 1999 ACS DUPLICATE 5

AN 1998:573498 HCAPLUS

DN 129:290288

TI Conversion of spinosyn A and spinosyn D to their respective 9- and 17-pseudoaglycones and their aglycons

AU Creemer, Lawrence C.; Kirst, Herbert A.; Paschal, Jonathan W.

CS Research and Development, Elanco Animal Health, Greenfield, IN, 46140, USA

SO J. Antibiot. (1998), 51(8), 795-800

CODEN: JANTAJ; ISSN: 0021-8820

PB Japan Antibiotics Research Association

DT Journal

LA English

CC 33-2 (Carbohydrates)

Section cross-reference(s): 5, 26

OS CASREACT 129:290288

AB Forosamine at the 17-position of spinosyns A and D was hydrolyzed under mild acidic conditions to give the corresponding 17-pseudoaglycones. The tri-O-methylrhamnose at the 9-position of the 17-pseudoaglycone of spinosyn A was hydrolyzed under more vigorous acidic conditions to give the aglycon of spinosyn A. However, these conditions led to decomn. of the 17-pseudoaglycone of spinosyn D, presumably due to more facile protonation of the 5,6-double bond to produce a tertiary carbonium ion which undergoes further rearrangements. Spinosyns J and L (3'-O-demethyl spinosyn A and D, resp.) obtained from fermn. of biosynthetically-blocked mutant strains of *Saccharopolyspora spinosa*, were oxidized to give the corresponding 3'-keto-derivs. and the resultant keto-sugars were then B-eliminated under basic conditions to give the 9-pseudoaglycones of spinosyns A and D resp. Forosamine at the 17-position of the 9-pseudoaglycone of spinosyn D was then readily hydrolyzed to yield the aglycon of spinosyn D.

ST spinosyn pseudoaglycone aglycon prepn hydrolyzation

IT Insecticides

(prepn. of spinosyn A and spinosyn D derivs. as insecticides)

IT 131929-55-0P 131929-68-5P 149439-71-4P 149439-72-5P 149439-75-8P

149439-76-9P

RL: BAC (Biological activity or effector, except adverse); RCT (Reactant);

SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological

study); PREP (Preparation); USES (Uses)

(conversion of spinosyn A and spinosyn D to their resp. 9- and

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- 17-pseudoaglycones and their aglycons)  
IT 131929-60-7, Spinosyn A 131929-63-0, Spinosyn D  
131929-67-4 149092-01-3  
RL: BAC (Biological activity or effector, except adverse); RCT (Reactant);  
THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(conversion of spinosyn A and spinosyn D to their resp. 9- and  
17-pseudoaglycones and their aglycons)  
IT 149439-79-2P 149560-97-4P  
RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic  
preparation); THU (Therapeutic use); BIOL (Biological study); PREP  
(Preparation); USES (Uses)  
(conversion of spinosyn A and spinosyn D to their resp. 9- and  
17-pseudoaglycones and their aglycons)
- L12 ANSWER 9 OF 52 HCAPLUS COPYRIGHT 1999 ACS  
AN 1998:361461 HCAPLUS  
DN 129:80675  
TI Fermentation-derived compounds as a source of new products  
AU Kirst, Herbert A.  
CS Research and Development, Elanco Animal Health, Greenfield, IN,  
46140-0708, USA  
SO Pure Appl. Chem. (1998), 70(2), 335-338  
CODEN: PACHAS; ISSN: 0033-4545  
PB Blackwell Science Ltd.  
DT Journal  
LA English  
CC 16-5 (Fermentation and Bioindustrial Chemistry)  
AB New products may be sought by modifying older fermn. products, exemplified  
by the semisynthetic antibiotic tilmicosin and other derivs. of tylosin.  
Another approach is to screen fermn. broths, exemplified by the discovery  
of the structurally-unique insecticidal macrolide spinosad.  
ST fermn product tilmicosin tylosin spinosad  
IT Fermentation  
(fermn.-derived compds. as source of new products)  
IT 1401-69-0P, Tylosin 108050-54-0P, Tilmicosin 131929-60-7P,  
Spinosyn A 131929-63-0P, Spinosyn D 168316-95-8P, Spinosad  
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP  
(Preparation)  
(fermn.-derived compds. as source of new products)
- L12 ANSWER 10 OF 52 HCAPLUS COPYRIGHT 1999 ACS DUPLICATE 6  
AN 1998:566649 HCAPLUS  
DN 129:299232  
TI Naturally derived materials as products and leads for insect control: the  
spinosyns  
AU Crouse, Gary D.; Sparks, Thomas C.  
CS Dow AgroSciences, Indianapolis, IN, 46268, USA  
SO Rev. Toxicol. (Amsterdam) (1998), 2(1-4), 133-146  
CODEN: RETOFJ; ISSN: 1382-6980  
PB IOS Press  
DT Journal  
LA English  
CC 5-4 (Agrochemical Bioregulators)  
AB Exts. from a soil sample collected by Eli Lilly scientists in 1982 were  
found to be insecticidal. The activity was found to derive from a unique  
family of macrocyclic lactones, which have been given the generic name  
spinosyns. These materials are active both as contact and ingestion  
agents, and show high levels of activity against a wide variety of  
lepidopteran as well as numerous other economically important species.  
They are fast-acting, and they have a mammalian and environmental profile  
that is superior to that of most other synthetic insect control agents.  
The mode of action is different from that of any known insecticide, thus  
offering an alternative to other products which have reduced potency due  
to development of resistance. These new macrolides are being developed
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for use on cotton and vegetables, and are currently registered as Tracer Naturalyte Insect Control.

ST spinosyn insecticide

IT Insecticides

(spinosyns as insecticides)

IT 131929-60-7, Spinosyn A 131929-63-0, Spinosyn D

131929-64-1, Spinosyn E 131929-65-2, Spinosyn F

132016-82-1, Spinosyn G

RL: BAC (Biological activity or effector, except adverse); BIOL

(Biological study)

(spinosyns as insecticides)

L12 ANSWER 11 OF 52 HCAPLUS COPYRIGHT 1999 ACS DUPLICATE 7

AN 1998:503443 HCAPLUS

DN 129:212948

TI Studies on the mode of action of spinosad: the internal effective concentration and the concentration dependence of neural excitation

AU Salgado, Vincent L.; Sheets, Joel J.; Watson, Gerald B.; Schmidt, Arthur L.

CS Dow AgroSciences LLC, Indianapolis, IN, 46268, USA

SO Pestic. Biochem. Physiol. (1998), 60(2), 103-110

CODEN: PCBPBS; ISSN: 0048-3575

PB Academic Press

DT Journal

LA English

CC 5-4 (Agrochemical Bioregulators)

Section cross-reference(s): 4

AB The mode of action of spinosyns, a novel class of naturally derived insecticidal macrocyclic lactones, is discussed. The concn. dependence of central nervous system (CNS) stimulation was detd. using ganglia isolated from cockroaches, house fly larvae, and tobacco hornworm larvae. The tobacco hornworm nervous system was most sensitive, with a steep dose-response relation and an ED50 of 5 nM for spinosyn A. The response of the housefly CNS was comparable, showing no clear effect at 3 nM and near-maximal stimulation at 10 nM spinosyn A. The cockroach CNS also displayed a steep dose-response relation, with a threshold of 10 nM and an EC50 of 32 nM. That the nerve cords of cockroaches are exposed to comparable levels of spinosyn A during poisoning was established by comparison of the concn. of spinosyn A taken up by cockroach nerve cords during exposure in vivo, in cockroaches treated with a threshold dose, with that in isolated nerve cords equilibrated with a soln. of spinosyn A in saline. A saline concn. of 21 nM was estd. to give the same nerve cord concn. as found at the threshold dose for prostration. Thus, during poisoning, spinosyn A reaches a concn. inside the insect that is sufficient to directly excite the central nervous system. (c) 1998 Academic Press.

ST spinosyn insect central nervous system

IT Central nervous system

Housefly (*Musca domestica*)

*Manduca sexta*

*Periplaneta americana*

(mode of action of spinosad on insect neural excitation)

IT 131929-60-7, Spinosyn A

RL: BAC (Biological activity or effector, except adverse); BIOL

(Biological study)

(mode of action of spinosad on insect neural excitation)

L12 ANSWER 12 OF 52 HCAPLUS COPYRIGHT 1999 ACS DUPLICATE 8

AN 1998:503439 HCAPLUS

DN 129:212947

TI Studies on the mode of action of spinosad: insect symptoms and physiological correlates

AU Salgado, Vincent L.

CS Dow AgroSciences LLC, Indianapolis, IN, 46268, USA

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SO Pestic. Biochem. Physiol. (1998), 60(2), 91-102  
 CODEN: PCBPBS; ISSN: 0048-3575  
 PB Academic Press  
 DT Journal  
 LA English  
 CC 5-4 (Agrochemical Bioregulators)  
 AB The novel mode of action of spinosyns, a new class of macrocyclic lactone natural products for insect control, was discussed. Spinosyn A, the major active component of spinosad, was used as a model for these studies. Spinosyn A initially caused involuntary muscle contractions and tremors by widespread excitation of neurons in the central nervous system. Spinosyn A also caused excitation when applied directly to isolated insect ganglia at submicromolar concns. Prolonged spinosyn-induced hyperexcitation resulted in paralysis that was assocd. with neuromuscular fatigue. However, spinosyn A had no direct neuromuscular depressant effect and at very high concns. actually enhanced neuromuscular transmission. (c) 1998 Academic Press.

ST spinosyn insect physiol  
 IT Central nervous system  
 Neuromuscular transmission  
 (effect of spinosad on insect physiol.)

IT 131929-60-7, Spinosyn A 131929-63-0, Spinosyn D  
 RL: BAC (Biological activity or effector, except adverse); BIOL  
 (Biological study)  
 (mode of action of spinosad in insect control)

L12 ANSWER 13 OF 52 BIOSIS COPYRIGHT 1999 BIOSIS  
 AN 1998:421719 BIOSIS  
 DN PREV199800421719  
 TI Rhamnose replacement analogs of **spinosyn A**.  
 AU Anzeveno, Peter B.; Green, Frederick R., III  
 CS Dow AgroScience LLC, 9330 Zionsville Road, Indianapolis, IN 46268 USA  
 SO Abstracts of Papers American Chemical Society, (1998) Vol. 216, No. 1-3, pp. AGRO 16.  
 Meeting Info.: 216th National Meeting of the American Chemical Society  
 Boston, Massachusetts, USA August 23-27, 1998 American Chemical Society  
 . ISSN: 0065-7727.

DT Conference  
 LA English  
 CC Pest Control, General; Pesticides; Herbicides \*54600  
 Biochemical Methods - Carbohydrates \*10058  
 General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals \*00520  
 Biochemical Methods - General \*10050

IT Major Concepts  
 Pesticides

IT Chemicals & Biochemicals  
 rhamnose: analog replacement; **spinosyn A: insecticide**

IT Miscellaneous Descriptors  
 Meeting Abstract

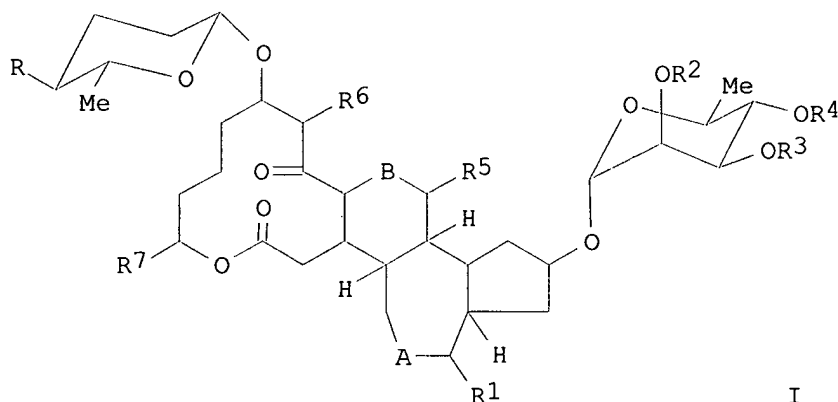
RN 3615-41-6 (RHAMNOSE)  
 131929-60-7 (**SPINOSYN A**)

L12 ANSWER 14 OF 52 HCAPLUS COPYRIGHT 1999 ACS DUPLICATE 9  
 AN 1997:181111 HCAPLUS  
 DN 126:171845  
 TI Preparation of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides

IN Deamicis, Carl Vincent; Anzeveno, Peter Biagio; Martynow, Jacek G.; McLaren, Kevin L.; Green, Frederick Richard, III; Sparks, Thomas C.; Kirst, Herbert A.; Creemer, Lawrence Camillo; Worden, Thomas V.; Schoonover, Joe Raymond, Jr.; Gifford, James Michael; Hatton, Christopher J.; Hegde, Vidyadhar B.; Crouse, Gary D.; Thoreen, Brian R.; Ricks, Michael J.; et al.

PA Dowelanco, USA; Deamicis, Carl Vincent; Anzeveno, Peter Biagio; Martynow, Jacek G.  
 SO PCT Int. Appl., 280 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 IC ICM C07H017-08  
 ICS A01N043-22; C07D407-12; C07D313-00  
 CC 33-7 (Carbohydrates)  
 Section cross-reference(s): 5, 34  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9700265	A1	19970103	WO 96-US10327	19960613
	W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9661771	A1	19970115	AU 96-61771	19960613
	EP 837870	A1	19980429	EP 96-919423	19960613
	R: DE, ES, FR, GB, IT				
	CN 1191541	A	19980826	CN 96-195634	19960613
	BR 9608380	A	19990105	BR 96-8380	19960613
	JP 11506117	T2	19990602	JP 96-503351	19960613
PRAI	US 95-201		19950614		
	US 95-1435		19950714		
	US 95-9006		19951221		
	WO 96-US10327		19960613		
OS	MARPAT 126:171845				
GI					



AB Title compds. I (A, B = single bond, double bond, epoxide linkage; R = alkylamino, ether; R1, R6 = H, Me; R2-R4 = alkyl, haloalkyl, alkanoyl, OH; R5 = H, alkyl, alkylamino, alkylhydroxylamino; R7 = Me, Et) are prepd. by modifying the compds. that are naturally produced from *Saccharopolyspora spinosa*. The compds. of the invention have been shown to have activity against insects and mites. The compds. are prepd. by modifying the rhamnose sugar, modification of the forosamine sugar, or starting with pseudo-aglycon and then replacement with a nonsugar deriv. or different sugar, modification of the 5, 6, 5-tricyclic and 12-membered macrocyclic lactone part of the compds. naturally produced or of the pseudo-aglycon of the natural compds. Thus, 2'-O-trifluoroacetyl sponosyn Q was prepd. and tested as a control of *Stomoxys calcitrans* (stable fly) and *Phormia regina*  
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(blow fly) with 100% of ASF killed at 100 ppm.

ST Phormia regina insecticide spinosyn glycoside prepn; Stomoxys calcitrans insecticide spinosyn glycoside prepn; amino acid spinosyn aminodeoxy glycoside prepn; miticide spinosyn macrocyclic aminodeoxy glycoside prepn; Saccharopolyspora spinosa spinosyn purifn; spinosyn macrocyclic aminodeoxy glycoside prepn insecticide

IT Phormia regina  
Saccharopolyspora spinosa  
Stomoxys calcitrans  
(prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT Insecticides  
(spinosyn glycosides; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT Acaricides  
(spinosyn macrocyclic lactone; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT Glycosides  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(spinosyn macrocyclic lactone; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 187167-20-0P  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(9:1 .alpha./.beta. anomeric mixt.; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 131929-60-7P, Spinosyn A 131929-61-8P, Spinosyn B  
131929-62-9P, Spinosyn C 131929-63-0P, Spinosyn D  
131929-65-2P, Spinosyn F 131929-66-3P, Spinosyn H  
131929-67-4P, Spinosyn J 131929-68-5P 132016-82-1P,  
Spinosyn G 149092-01-3P, Spinosyn L 149092-02-4P,  
Spinosyn M 149092-03-5P, Spinosyn N 149438-28-8P,  
Spinosyn Q 149438-29-9P, Spinosyn R 149438-30-2P,  
Spinosyn T 149466-03-5P, Spinosyn S 159195-00-3P  
159195-01-4P, Spinosyn O 159195-06-9P, Spinosyn Y  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); PUR (Purification or recovery); RCT (Reactant); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(Saccharopolyspora spinosa; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 131929-64-1P, Spinosyn E  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); PUR (Purification or recovery); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(Saccharopolyspora spinosa; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 187170-42-9P 187170-43-0P 187170-49-6P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(major reported isomer of mixt.; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 187170-85-0P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(major reported isomer of .alpha./.beta. mixt.; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

- IT 187169-82-0P 187169-85-3P 187169-87-5P  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no information for 15-hydroxy stereo; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187263-77-0P  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given at 13-, 14-, or 17-centers; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187262-66-4P  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given for 13,14-epoxy ring or 15-hydroxy; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187169-92-2P  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given for 13,14-methano ring; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187170-11-2P  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given for 16,17-dehydro; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187172-24-3P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given for 2,3-dehydro bond; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187169-94-4P  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given for 2- or 14-positions; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187172-02-7P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given for 2-Br center; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187172-12-9P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given for 2-CHO center; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187172-68-5P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)



- (no stereo given for 2-CH<sub>2</sub>-piperidine center; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187172-18-5P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given for 2-CH<sub>2</sub>OH center; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187172-38-9P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given for 2-CN center; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187172-40-3P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given for 2-CN,F center; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187172-28-7P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given for 2-Cl center; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187171-97-7P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given for 2-Et center; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187171-98-8P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given for 2-EtO-CO- center; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187172-31-2P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given for 2-F center; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187171-99-9P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given for 2-MeS center; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187172-10-7P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)

- (no stereo given for 2-PhS center; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187172-70-9P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given for 2-Se(O)Ph or Se=O centers; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187172-20-9P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given for 2-SePh center; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187172-36-7P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given for 2-center or for imino double bond; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187172-33-4P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given for 2-hydrazone center or for hydrazone double bond; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187172-19-6P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given for 2-position or CH(OH)OMe center; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187172-14-1P 187172-16-3P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given for 2-thio or S=O centers; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187172-55-0P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given for 5-F center; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187172-61-8P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(no stereo given for 6-Me center; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)
- IT 187263-78-1P 187263-88-3P

RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (no stereo given for dioxolane ring centers; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 187172-26-5P  
 RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (no stereo given for hemi-ketal center; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 187171-28-4P 187171-41-1P  
 RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (no stereo given for ortho ester center; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 187170-75-8P  
 RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (no stereo information at 6-Me center; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 187167-19-7P  
 RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (no .alpha./.beta. anomeric information; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 153223-05-3P  
 RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (no .alpha./.beta. information given; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 69980-52-5 187170-84-9  
 RL: RCT (Reactant)  
 (no .alpha./.beta. information given; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 79-44-7P 513-38-2P, 1-Iodo-2-methylpropane 149439-70-3P 149439-72-5P  
 149439-75-8P 149439-76-9P 149439-77-0P 149560-97-4P 187165-62-4P  
 187165-65-7P 187165-67-9P 187165-69-1P 187165-71-5P 187165-73-7P  
 187165-75-9P 187165-77-1P 187165-79-3P 187165-81-7P 187165-83-9P  
 187165-85-1P 187165-87-3P 187165-89-5P 187165-90-8P 187165-92-0P  
 187165-94-2P 187165-96-4P 187165-98-6P 187166-00-3P 187166-02-5P  
 187166-04-7P 187166-06-9P 187166-08-1P 187166-10-5P 187166-12-7P  
 187166-13-8P 187166-15-0P 187166-17-2P 187166-19-4P 187166-21-8P  
 187166-23-0P 187166-24-1P 187166-27-4P 187166-29-6P 187166-30-9P  
 187166-32-1P 187166-34-3P 187166-36-5P 187166-39-8P 187166-40-1P  
 187166-42-3P 187166-44-5P 187166-46-7P 187166-48-9P 187166-49-0P  
 187166-51-4P 187166-53-6P 187166-54-7P 187166-55-8P 187166-58-1P  
 187166-59-2P 187166-61-6P 187166-63-8P 187166-65-0P 187166-66-1P  
 187166-68-3P 187166-69-4P 187166-71-8P 187166-73-0P 187166-74-1P  
 187166-75-2P 187166-77-4P 187166-79-6P 187166-81-0P 187166-83-2P  
 187166-85-4P 187166-86-5P 187166-87-6P 187166-88-7P 187166-91-2P  
 187166-93-4P 187166-94-5P 187166-96-7P 187166-98-9P 187167-03-9P  
 187167-09-5P 187167-10-8P 187167-11-9P 187167-13-1P 187167-14-2P  
 187167-15-3P 187167-16-4P 187167-17-5P 187167-18-6P 187167-21-1P

187167-22-2P	187167-23-3P	187167-24-4P	187167-25-5P	187167-26-6P
187167-27-7P	187167-28-8P	187167-29-9P	187167-30-2P	187167-31-3P
187167-32-4P	187167-33-5P	187167-34-6P	187167-35-7P	187167-36-8P
187167-37-9P	187167-38-0P	187167-39-1P	187167-40-4P	187167-41-5P
187167-42-6P	187167-44-8P	187167-45-9P	187167-46-0P	187167-47-1P
187167-48-2P	187167-49-3P	187167-50-6P	187167-51-7P	187167-52-8P
187167-53-9P	187167-54-0P	187167-56-2P	187167-57-3P	187167-58-4P
187167-59-5P	187167-60-8P	187167-61-9P	187167-62-0P	187167-63-1P
187167-64-2P	187167-65-3P	187167-66-4P	187167-67-5P	187167-68-6P
187167-70-0P	187167-71-1P	187167-72-2P	187167-73-3P	187167-74-4P
187167-75-5P	187167-78-8P	187167-80-2P	187167-82-4P	187167-84-6P
187167-86-8P	187167-87-9P	187167-88-0P	187167-89-1P	187167-90-4P
187167-91-5P	187167-92-6P	187167-93-7P	187167-94-8P	187167-95-9P
187167-96-0P	187167-97-1P	187167-98-2P	187167-99-3P	187168-00-9P
187168-02-1P	187168-04-3P	187168-06-5P	187168-08-7P	187168-10-1P
187168-12-3P	187168-13-4P	187168-14-5P	187168-15-6P	187168-16-7P
187168-17-8P	187168-18-9P	187168-19-0P	187168-20-3P	187168-21-4P
187168-22-5P	187168-23-6P	187168-24-7P	187168-25-8P	187168-26-9P
187168-27-0P	187168-28-1P	187168-29-2P	187168-30-5P	187168-32-7P
187168-33-8P	187168-34-9P	187168-35-0P	187168-36-1P	187168-37-2P
187168-38-3P	187168-39-4P	187168-40-7P	187168-41-8P	187168-43-0P
187168-44-1P	187168-45-2P	187168-46-3P	187168-47-4P	187168-48-5P
187168-49-6P	187168-50-9P	187168-51-0P	187168-52-1P	187168-53-2P
187168-54-3P	187168-55-4P	187168-56-5P	187168-57-6P	187168-58-7P
187168-59-8P	187168-60-1P	187168-61-2P	187168-62-3P	187168-63-4P
187168-64-5P	187168-65-6P	187168-66-7P	187168-67-8P	187168-68-9P
187168-69-0P	187168-70-3P	187168-71-4P	187168-72-5P	187168-73-6P
187168-74-7P	187168-75-8P	187168-76-9P	187168-77-0P	187168-78-1P

RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)

(prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT	187168-79-2P	187168-80-5P	187168-81-6P	187168-82-7P	187168-83-8P
	187168-84-9P	187168-86-1P	187168-91-8P	187168-92-9P	187168-94-1P
	187168-98-5P	187169-01-3P	187169-04-6P	187169-06-8P	187169-08-0P
	187169-11-5P	187169-14-8P	187169-19-3P	187169-21-7P	187169-23-9P
	187169-25-1P	187169-28-4P	187169-31-9P	187169-33-1P	187169-35-3P
	187169-36-4P	187169-37-5P	187169-38-6P	187169-39-7P	187169-40-0P
	187169-41-1P	187169-42-2P	187169-43-3P	187169-44-4P	187169-45-5P
	187169-46-6P	187169-47-7P	187169-48-8P	187169-49-9P	187169-50-2P
	187169-51-3P	187169-52-4P	187169-53-5P	187169-55-7P	187169-56-8P
	187169-58-0P	187169-59-1P	187169-61-5P	187169-63-7P	187169-65-9P
	187169-66-0P	187169-67-1P	187169-68-2P	187169-70-6P	187169-73-9P
	187169-75-1P	187169-77-3P	187169-79-5P	187169-80-8P	187169-81-9P
	187169-84-2P	187169-86-4P	187169-88-6P	187169-90-0P	187169-95-5P
	187169-97-7P	187169-98-8P	187170-01-0P	187170-03-2P	187170-04-3P
	187170-06-5P	187170-08-7P	187170-14-5P	187170-16-7P	187170-19-0P
	187170-23-6P	187170-25-8P	187172-63-0P	187172-64-1P	187172-65-2P
	187222-10-2P				

RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)

(prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT	149439-71-4P	187166-57-0P	187167-00-6P	187167-02-8P	
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RL: AGR (Agricultural use); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)

(prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT	35954-65-5P	56709-66-1P	131929-56-1P	131929-57-2P	149439-79-2P
	159059-20-8P	159059-21-9P	186352-03-4P	187170-26-9P	187170-27-0P
	187170-29-2P	187170-31-6P	187170-34-9P	187170-36-1P	187170-37-2P
	187170-38-3P	187170-39-4P	187170-40-7P	187170-41-8P	187170-44-1P

187170-45-2P	187170-46-3P	187170-47-4P	187170-50-9P	187170-51-0P
187170-52-1P	187170-56-5P	187170-58-7P	187170-60-1P	187170-62-3P
187170-64-5P	187170-65-6P	187170-66-7P	187170-67-8P	187170-68-9P
187170-69-0P	187170-70-3P	187170-71-4P	187170-72-5P	187170-73-6P
187170-76-9P	187170-77-0P	187170-78-1P	187170-79-2P	187170-80-5P
187170-81-6P	187170-82-7P	187170-83-8P	187170-86-1P	187170-87-2P
187170-88-3P	187170-89-4P	187170-90-7P	187170-91-8P	187170-93-0P
187170-94-1P	187170-95-2P	187170-96-3P	187170-97-4P	187170-98-5P
187170-99-6P	187171-00-2P	187171-01-3P	187171-02-4P	187171-03-5P
187171-04-6P	187171-05-7P	187171-06-8P	187171-07-9P	187171-08-0P
187171-09-1P	187171-10-4P	187171-11-5P	187171-12-6P	187171-14-8P
187171-15-9P	187171-16-0P	187171-18-2P	187171-23-9P	187171-26-2P
187171-31-9P	187171-33-1P	187171-36-4P	187171-38-6P	187171-44-4P
187171-47-7P	187171-49-9P	187171-52-4P	187171-54-6P	187171-55-7P
187171-57-9P	187171-60-4P	187171-62-6P	187171-65-9P	187171-68-2P
187171-69-3P	187171-71-7P	187171-73-9P	187171-74-0P	187171-77-3P
187171-80-8P	187171-82-0P	187171-84-2P	187171-88-6P	187171-92-2P
187171-93-3P	187171-94-4P	187171-95-5P	187171-96-6P	187172-05-0P
187172-08-3P	187172-22-1P	187172-43-6P	187172-45-8P	187172-47-0P
187172-48-1P	187172-50-5P	187172-52-7P	187172-57-2P	187172-59-4P
187172-62-9P	187172-66-3P	187172-67-4P	187172-69-6P	187172-71-0P

RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)

(prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 55-22-1, Isonicotinic acid, reactions 65-85-0, Benzoic acid, reactions 75-30-9, 2-Iodopropane 79-30-1 85-52-9, 2-Benzoylbenzoic acid 100-09-4, 4-Methoxybenzoic acid 102-36-3, 3,4-Dichlorophenylisocyanate 103-82-2, Phenylacetic acid, reactions 104-01-8, 4-Methoxyphenylacetic acid 104-03-0, 4-Nitrophenylacetic acid 110-87-2, 3,4-Dihydro-2H-pyran 111-34-2, Butyl vinyl ether 118-91-2, o-Chlorobenzoic acid 351-35-9, 3-Trifluoromethylphenylacetic acid 536-66-3, 4-Isopropylbenzoic acid 540-54-5 542-69-8, 1-Iodobutane 542-85-8, Ethylisothiocyanate 556-61-6, Methylisothiocyanate 572-09-8 589-57-1, Diethyl chlorophosphite 619-84-1, 4-Dimethylaminobenzoic acid 622-78-6, Benzylisothiocyanate 628-21-7, 1,4-Diiodobutane 628-77-3, 1,5-Diiodopentane 762-49-2, 1-Bromo-2-fluoroethane 764-41-0, 1,4-Dichlorobut-2-ene 922-67-8, Methyl propiolate 947-84-2, 2-Phenylbenzoic acid 1118-68-9 1142-20-7 1798-09-0, 3-Methoxyphenylacetic acid 1877-73-2, 3-Nitrophenylacetic acid 2438-04-2, 2-Isopropylbenzoic acid 2444-36-2, 2-Chlorobenzeneacetic acid 2524-04-1, Diethyl chlorothiophosphate 3303-84-2 3383-21-9 4124-30-5, Dichloroacetic anhydride 4530-20-5 4755-77-5, Ethyl oxalyl chloride 5416-93-3, 4-Methoxyphenyl isocyanate 6226-25-1 6575-24-2 7051-34-5, (Cyclopropyl)methyl bromide 10493-44-4, 4-Bromo-1,1,2-trifluorobutene 10511-51-0 15674-67-6 17341-93-4, 2,2,2-Trichloroethyl chloroformate 17476-04-9 18423-27-3 19719-28-9 26371-07-3, 1-Piperidinepropanoic acid 34819-86-8 35037-73-1 35737-10-1 38078-09-0, Diethylaminosulfur trifluoride 59025-55-7, 2,4-Difluorophenylisocyanate 68641-49-6 70258-18-3 92367-11-8 135192-53-9 172998-68-4, Trifluoromethylbenzoyl chloride 187170-53-2 187170-54-3 187222-09-9

RL: RCT (Reactant)

(prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 187170-21-4P

RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)

(unsepd. E/Z and R/S mixt.; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 187168-42-9P

RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(unsepd. isomer mixt. at 4"; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 187168-31-6P  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(unsepd. isomer mixt. at THP; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 187166-89-8P 187166-90-1P 187167-07-3P  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(unsepd. isomer mixt.; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 187169-83-1P  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(unsepd. mixt. at 15-hydroxy; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 187169-96-6P  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(unsepd. mixt. at amine center; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 187169-91-1P  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(unsepd. mixt. at fluoro center; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 187169-89-7P  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(unsepd. mixt. at hemi-acetal center; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 187170-92-9P  
RL: ARG (Analytical reagent use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(unsepd. mixt. of THP isomers; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 187167-43-7P 187167-55-1P  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(unsepd. mixt.; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

IT 63864-94-8  
RL: RCT (Reactant)  
(.alpha./.beta. anomeric mixt.; prepn. of spinosyn macrocyclic lactone aminodeoxy glycosides as insecticides and miticides)

L12 ANSWER 15 OF 52 HCAPLUS COPYRIGHT 1999 ACS

AN 1997:85513 HCAPLUS

DN 126:130649

TI Process for the production of A83543 compounds with Saccharopolyspora spinosa

KATHLEEN FULLER STIC LIBRARY 308-4290

IN Turner, Jan R.; Huber, Mary L. B.; Broughton, Mary C.; Mynderse, Jon S.;  
 Martin, James W.  
 PA Dowelanco, USA  
 SO U.S., 26 pp. Cont. of U.S. Ser. No. 973,121,abandoned.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 IC ICM C12P019-62  
 ICS C12P019-60  
 NCL 435076000  
 CC 16-2 (Fermentation and Bioindustrial Chemistry)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5591606	A	19970107	US 95-397306	19950302
	US 5631155	A	19970520	US 95-484462	19950607
	US 5767253	A	19980616	US 95-476159	19950822
PRAI	US 92-973121		19921106		
	US 95-397306		19950302		
OS	MARPAT 126:130649				
AB	New A83543 components, including fermn. products A83543Q, A83543R, A83543S, and A83543T and N-demethyl derivs., and salts thereof, are useful for the control of insects and mites. The pseudoaglycones are useful for the prepn. of A83543 components. Methods for making the new A83543 components by culture of Saccharopolyspora spinosa NRRL 18823 are provided. Insecticidal and ectoparasiticide compns. contg. new A83543 components are also provided.				
ST	insecticide A83543 compd fermn Saccharopolyspora; miticide A83543 compd fermn Saccharopolyspora				
IT	Fermentation Insecticides Saccharopolyspora spinosa (insecticidal and miticidal A83543 compds. from Saccharopolyspora spinosa)				
IT	Insecticides (miticides; insecticidal and miticidal A83543 compds. from Saccharopolyspora spinosa)				
IT	131929-58-3P	186462-98-6P	186462-99-7P	186463-01-4P	186463-03-6P
	186463-05-8P	186463-06-9P	186463-07-0P	186463-08-1P	186463-09-2P
	186463-10-5P				
	RL: BPN (Biosynthetic preparation); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation) (A83543 deriv.)				
IT	149438-28-8P, A83543Q 149438-29-9P, A83543R 149438-30-2P, A83543T 149466-03-5P, A83543S RL: ANT (Analyte); BAC (Biological activity or effector, except adverse); BMF (Bioindustrial manufacture); BOC (Biological occurrence); BPN (Biosynthetic preparation); PRP (Properties); PUR (Purification or recovery); ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation) (insecticidal and miticidal A83543 compds. from Saccharopolyspora spinosa)				

L12 ANSWER 16 OF 52 HCAPLUS COPYRIGHT 1999 ACS DUPLICATE 10  
 AN 1997:547225 HCAPLUS  
 DN 127:132208  
 TI Determination of the naturally-derived insect control agent spinosad and its metabolites in soil, sediment, and water by HPLC with UV detection  
 AU West, Sheldon D.  
 CS Global Environmental Chemistry Laboratory Indianapolis, DowElanco, Indianapolis, IN, 46268-1054, USA  
 SO J. Agric. Food Chem. (1997), 45(8), 3107-3113  
 CODEN: JAFCAU; ISSN: 0021-8561  
 PB American Chemical Society

DT Journal  
LA English  
CC 5-1 (Agrochemical Bioregulators)  
Section cross-reference(s): 80  
AB The method detcs. residues of the active ingredients in spinosad (spinosyns A and D) and two metabolites (spinosyn B and N-demethylspinosyn D). For soil and sediment, the method has a limit of quantitation of 0.01 .mu.g/g and a limit of detection of 0.003 .mu.g/g. For water, the method has a limit of quantitation of 0.001 .mu.g/mL and a limit of detection of 0.0003 .mu.g/mL. The analytes are extd. from water, soil, or sediment using appropriate solvents, and the exts. are purified by liq.-liq. partitioning and silica solid phase extn. All four analytes are detd. simultaneously in the purified exts. by reversed-phase HPLC with UV detection at 250 nm.  
ST spinosad metabolites soil sediment water HPLC  
IT Soil analysis  
(detn. of spinosad and its metabolites in soil, sediment, and water by HPLC with UV detection)  
IT 131929-60-7 131929-61-8 131929-63-0  
149439-70-3  
RL: ANT (Analyte); ANST (Analytical study)  
(detn. in soil, sediment, and water, by HPLC with UV detection)  
IT 7732-18-5, Water, analysis  
RL: AMX (Analytical matrix); ANST (Analytical study)  
(detn. of spinosad and its metabolites in soil, sediment, and water by HPLC with UV detection)

L12 ANSWER 17 OF 52 HCAPLUS COPYRIGHT 1999 ACS DUPLICATE 11  
AN 1997:331929 HCAPLUS  
DN 126:329707  
TI Application of Empore Disk Extraction for Trace Analysis of Spinosad and Metabolites in Leafy Vegetables, Peppers, and Tomatoes by High-Performance Liquid Chromatography with Ultraviolet Detection  
AU Yeh, Li-Tain; Schwedler, Debbie A.; Schelle, Gary E.; Balcer, Jesse L.  
CS Global Environmental Chemistry Laboratory Indianapolis Lab, DowElanco, Indianapolis, IN, 46268, USA  
SO J. Agric. Food Chem. (1997), 45(5), 1746-1751  
CODEN: JAFCAU; ISSN: 0021-8561  
PB American Chemical Society  
DT Journal  
LA English  
CC 17-5 (Food and Feed Chemistry)  
AB Residue methods were developed for the quantitation of spinosad and metabolites in leafy vegetables, peppers, and tomatoes. The compds. were extd. with a soln. of acetonitrile/water. The ext. was purified and concd. by C18 Empore disk extn., followed by silica and cyclohexyl solid-phase extn. All 5 analytes in the purified ext. were detd. simultaneously by reversed-phase HPLC with UV detection. For all analytes in 6 different commodities, the av. recoveries ranged from 77 to 97% with std. deviations ranging from 2 to 7%. The limits of quantitation and detection were 0.01 and 0.003 .mu.g/g, resp. These results compare favorably with those obtained by replacing the Empore disk extn. with liq.-liq. partitioning in the method. Anal. of cabbages sprayed with [14C]spinosyn A from a residue study indicated that the Empore disk extn. provided a cleaner final ext. Confirmation of analytes was performed by using liq. chromatog./mass spectrometry.  
ST spinosad detection leafy vegetable  
IT Extraction  
(Empore disk; application of Empore disk extn. for trace anal. of spinosad and metabolites in leafy vegetables and peppers and tomatoes by HPLC with UV detection)  
IT Cabbage  
Celery  
Food contamination  
Leafy green vegetable



Lettuce  
Spinach  
Tomato

(application of Empore disk extn. for trace anal. of spinosad and metabolites in leafy vegetables and peppers and tomatoes by HPLC with UV detection)

IT Capsicum annuum annum

(grossum group; application of Empore disk extn. for trace anal. of spinosad and metabolites in leafy vegetables and peppers and tomatoes by HPLC with UV detection)

IT 131929-60-7, Spinosyn A 131929-61-8, Spinosyn B

131929-63-0, Spinosyn D 149439-70-3, N-Demethyl spinosyn D

159195-00-3, Spinosyn k 168316-95-8D, Spinosad, derivs.

RL: ANT (Analyte); BOC (Biological occurrence); PRP (Properties); ANST

(Analytical study); BIOL (Biological study); OCCU (Occurrence)

(application of Empore disk extn. for trace anal. of spinosad and metabolites in leafy vegetables and peppers and tomatoes by HPLC with UV detection)

L12 ANSWER 18 OF 52 HCAPLUS COPYRIGHT 1999 ACS DUPLICATE 12

AN 1997:149242 HCAPLUS

DN 126:277670

TI Synthetic studies on spinosyn A. Convenient enantioselective construction of a suitably functionalized trans,anti,cis-decahydro-as-indacene intermediate via [3.3] sigmatropy and double configurational inversion

AU Paquette, Leo A.; Gao, Zhongli; Ni, Zhijie; Smith, Graham F.

CS Evans Chem. Lab., Ohio State Univ., Columbus, OH, 43210, USA

SO Tetrahedron Lett. (1997), 38(8), 1271-1274

CODEN: TELEAY; ISSN: 0040-4039

PB Elsevier

DT Journal

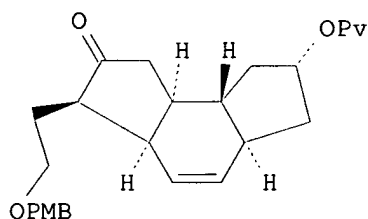
LA English

CC 33-3 (Carbohydrates)

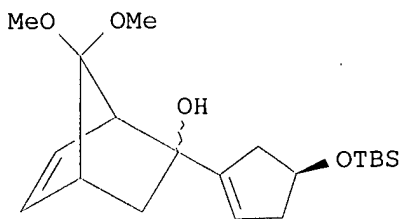
Section cross-reference(s): 26

OS CASREACT 126:277670

GI



I



II

AB An enantioselective route to the decahydro-as-indacene I is described.

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Anionic oxy-Cope rearrangement of alc. II initiates the sequence, which capitalizes on thermodyn. to control ultimate elaboration of the four key stereogenic centers resident in the several intermediates.

ST stereoselective cope rearrangement decahydroindacene prepn; thermodyn decahydroindacene prepn synthon spinosyn A; spinosyn synthon decahydroindacene prepn Cope rearrangement

IT Stereochemistry  
Synthons  
(enantioselective prepn. of trans,anti,cis-decahydro-as-indacene intermediate via [3.3] sigmatropy anionic oxy-Cope rearrangement in prepn. of spinosyn A)

IT Rearrangement  
(stereoselective, anionic oxy-Cope; enantioselective prepn. of trans,anti,cis-decahydro-as-indacene intermediate via [3.3] sigmatropy anionic oxy-Cope rearrangement in prepn. of spinosyn A)

IT 5927-18-4 51901-85-0 188910-40-9 188910-44-3  
RL: RCT (Reactant)  
(enantioselective prepn. of trans,anti,cis-decahydro-as-indacene intermediate via [3.3] sigmatropy anionic oxy-Cope rearrangement in prepn. of spinosyn A)

IT 188910-48-7P 188910-52-3P 188910-56-7P 188910-58-9P 188910-60-3P  
188910-62-5P 188910-64-7P 188910-68-1P 188910-71-6P 188910-72-7P  
188910-78-3P 188910-79-4P 188910-80-7P 188910-81-8P 188910-82-9P  
188910-83-0P 188910-84-1P 188910-85-2P 188910-86-3P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(enantioselective prepn. of trans,anti,cis-decahydro-as-indacene intermediate via [3.3] sigmatropy anionic oxy-Cope rearrangement in prepn. of spinosyn A)

IT **131929-60-7P**, Spinosyn A 188910-76-1P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(enantioselective prepn. of trans,anti,cis-decahydro-as-indacene intermediate via [3.3] sigmatropy anionic oxy-Cope rearrangement in prepn. of spinosyn A)

L12 ANSWER 19 OF 52 HCAPLUS COPYRIGHT 1999 ACS  
AN 1997:503850 HCAPLUS  
DN 127:105603  
TI Penetration and metabolism of spinosyn A in lepidopterous larvae  
AU Sparks, Thomas C.; Sheets, Joel J.; Skomp, John R.; Worden, Thomas V.; Hertlein, Mark B.; Larson, Larry L.; Bellows, David; Thibault, Stephen; Wally, Laura  
CS DowElanco, Discovery Research, Indianapolis, IN, USA  
SO Proc. - Beltwide Cotton Conf. (1997), (Vol. 2), 1259-1264  
CODEN: PCOCEN; ISSN: 1059-2644  
PB National Cotton Council  
DT Journal  
LA English  
CC 5-4 (Agrochemical Bioregulators)  
AB Spinosyn A, the principal component of Tracer (spinosad) possesses many highly desirable characteristics for an insect control agent including pyrethroid levels of activity and a very favorable mammalian and environmental profile. However, the initial action of spinosyn A is somewhat slower than some pyrethroid insecticides such as cypermethrin. Understanding spinosyn A penetration and metab. may provide approaches to further improving spinosad and the spinosyns as insect control agents. Studies comparing the injection vs. topical toxicity of spinosyn A and cypermethrin in *Heliothis virescens* (tobacco budworm) larvae show that spinosyn A is as active as cypermethrin by injection, but about 5-fold less active than cypermethrin when applied topically. This apparent difference in the rate of penetration is confirmed by in vivo studies in last stadium *Trichoplusia ni* (cabbage looper) larvae examg. the penetration of spinosyn A vs. permethrin; at 4 h posttreatment >30% of applied permethrin was internal while <10% of the applied spinosyn A was internal. Likewise, for topically applied spinosyns A, B and D, only 1.5

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- 4% of the applied dose was present in the hemolymph 3 h posttreatment. As with *T. ni*, radiotracer studies with *H. virescens* larvae showed that spinosyn A penetrates at a slower rate (2% in 3 h) than does cypermethrin (42% in 3 h). Studies of spinosyn A metab. in *H. virescens* midguts and induced rat liver homogenates suggest that spinosyn A is highly stable to oxidative metab. In vivo metab. of the acaricide, fenazaquin, and spinosyn A showed fenazaquin to be readily metabolized while there was no detectable metab. of spinosyn A. Likewise, the co-application of piperonyl butoxide with spinosyn A did not alter activity in adult house flies while a six-fold increase in toxicity was noted with piperonyl butoxide + permethrin. Thus, available information suggests that while spinosyn A is initially slower to penetrate into lepidopterous larvae, once it is internalized it is relatively stable to metab. thereby contributing to it's high level of activity.

ST spinosyn A metab Lepidoptera larvae

IT *Heliothis virescens*

*Trichoplusia ni*

(penetration and metab. of spinosyn A in lepidopterous larvae)

IT 131929-60-7, Spinosyn A

RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BIOL (Biological study); PROC (Process)

(penetration and metab. of spinosyn A in lepidopterous larvae)

IT 51-03-6, Piperonyl butoxide

RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)

(penetration and metab. of spinosyn A in lepidopterous larvae in presence of)

IT 131929-61-8, Spinosyn B 131929-62-9, Spinosyn C

131929-63-0, Spinosyn D

RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BIOL (Biological study); PROC (Process)

(penetration and metab. of spinosyns in lepidopterous larvae)

IT 52315-07-8, Cypermethrin 52645-53-1, Permethrin

RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BIOL (Biological study); PROC (Process)

(penetration and metab. of spinosyns in lepidopterous larvae in relation to)

L12 ANSWER 20 OF 52 BIOSIS COPYRIGHT 1999 BIOSIS

AN 1997:333588 BIOSIS

DN PREV199799632791

TI Alternative methods to control western flower thrips (*Frankliniella occidentalis*) in greenhouse crops.

AU Hopper, Douglas A.; McIntyre, Julie A.

CS Dep. Hortic. Landscape Architecture, Colo. State Univ., Fort Collins, CO 80523 USA

SO Hortscience, (1997) Vol. 32, No. 3, pp. 435.

Meeting Info.: 94th Annual International Conference of the American Society for Horticultural Science Salt Lake City, Utah, USA July 23-26, 1997

ISSN: 0018-5345.

DT Conference; Abstract; Conference

LA English

CC General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals 00520

Medical and Clinical Microbiology - General; Methods and Techniques \*36001

Horticulture - General; Miscellaneous and Mixed Crops \*53012

Pest Control, General; Pesticides; Herbicides \*54600

Economic Entomology - Field, Flower and Truck Crops \*60004

Economic Entomology - Biological Control \*60014

Economic Entomology - Chemical and Physical Control, General; Apparatus \*60016

Parasitology - General \*60502

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Invertebrata, Comparative and Experimental Morphology, Physiology and Pathology - Aschelminthes \*64016  
Invertebrata, Comparative and Experimental Morphology, Physiology and Pathology - Insecta - Physiology \*64076  
Invertebrata, Comparative and Experimental Morphology, Physiology and Pathology - Insecta - Pathology \*64078  
BC Plantae - Unspecified 11000  
Nematoda 51300  
Thysanoptera \*75350  
IT Major Concepts  
Economic Entomology; Horticulture (Agriculture); Infection;  
Parasitology; Pathology; Pest Assessment Control and Management;  
Physiology  
IT Chemicals & Biochemicals  
FENOXYCARB; BIFENTHRIN; TALSTAR; ABAMECTIN; **SPINOSYN A**;  
**SPINOSYN D**; SPINOSAD; AZADIRACHTIN; MARGOSAN-O; MYCOTROL;  
FIPRONIL  
IT Miscellaneous Descriptors  
ABAMECTIN; ALTERNATIVE PEST CONTROLS; AVID; AZADIRACHTIN; BIFENTHRIN;  
BIOLOGICAL CONTROL AGENT; BIOLOGICAL CONTROLS; BIOSAFE PRODUCT BASE;  
CHEMICAL CONTROLS; DIATOMACEOUS EARTH; ECONOMIC ENTOMOLOGY;  
ENTOMOPATHOGEN; FENOXYCARB; FIPRONIL; GREENHOUSE CROPS; HORTICULTURE;  
HOST; **INSECTICIDE**; MARGOSAN-O; MICROBIAL **INSECTICIDE**  
; MYCOTROL; NATURALIS-O; NEEM EXTRACT; PEST; PEST MANAGEMENT; PHYSICAL  
CONTROL; PHYSICAL CONTROLS; PRECISION; PUPATION DETERRENT; SPINOSAD;  
**SPINOSYN A**; **SPINOSYN D**; TALSTAR; WESTERN FLOWER THRIP  
ORGN Super Taxa  
Nematoda: Aschelminthes, Helminthes, Invertebrata, Animalia; Plantae -  
Unspecified: Plantae; Thysanoptera: **Insecta**, Arthropoda,  
Invertebrata, Animalia  
ORGN Organism Name  
nematode (Nematoda); Frankliniella occidentalis (Thysanoptera); Plantae  
(Plantae - Unspecified)  
ORGN Organism Superterms  
animals; arthropods; aschelminths; helminths; **insects**;  
invertebrates; plants  
RN 72490-01-8 (FENOXYCARB)  
82657-04-3 (BIFENTHRIN)  
82657-04-3 (TALSTAR)  
71751-41-2 (ABAMECTIN)  
**131929-60-7 (SPINOSYN A)**  
**131929-63-0 (SPINOSYN D)**  
168316-95-8 (SPINOSAD)  
11141-17-6 (AZADIRACHTIN)  
116580-64-4 (MARGOSAN-O)  
39443-19-1 (MYCOTROL)  
120068-37-3 (FIPRONIL)  
L12 ANSWER 21 OF 52 HCAPLUS COPYRIGHT 1999 ACS  
AN 1997:219958 HCAPLUS  
DN 126:234728  
TI Physical and biological properties of the spinosyns: novel macrolide  
pest-control agents from fermentation  
AU Deamicis, Carl V.; Dripps, James E.; Hatton, Chris J.; Karr, Laura L.  
CS DowElanco, Indianapolis, IN, 46268, USA  
SO ACS Symp. Ser. (1997), 658(Phytochemicals for Pest Control), 144-154  
CODEN: ACSMC8; ISSN: 0097-6156  
PB American Chemical Society  
DT Journal  
LA English  
CC 5-4 (Agrochemical Bioregulators)  
AB The spinosyns have com. levels of activity against lepidopteran pests.  
The spinosyns also exhibit activity in screening assays on  
leafhoppers/planthoppers, mites, and cockroaches. The spinosyns are  
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generally not active against aphids or nematodes. Acid addn. salts are much more water sol. than the free bases but have a similar insecticidal spectrum and activity. Small changes in the chem. structure of the spinosyns lead to large differences in phys. and biol. properties. For example, the presence of a Me group at 6-position (spinosyn D) reduces water soly. from 235 to 0.329 ppm at pH 7 and increases the m.p. from 118 .degree.C to 169 .degree.C relative to spinosyn A. Similarly, the absence of a Me group at the 3'-position (spinosyn J) decreases tobacco budworm activity by more than 200-fold relative to spinosyn A.

ST spinosyn insecticide

IT Insecticides

(phys. properties and insecticidal activity of spinosyns)

IT 131929-60-7, Spinosyn A 131929-61-8, Spinosyn B

131929-62-9, Spinosyn C 131929-63-0, Spinosyn D

131929-64-1, Spinosyn E 131929-65-2, Spinosyn F

131929-66-3, Spinosyn H 131929-67-4, Spinosyn J

149092-01-3, Spinosyn L 149092-02-4, Spinosyn M

149092-03-5, Spinosyn N 149438-28-8, Spinosyn Q

149438-29-9, Spinosyn R 149438-30-2, Spinosyn T

149466-03-5, Spinosyn S 159195-00-3, Spinosyn K

159195-01-4, Spinosyn O 159195-02-5, Spinosyn P

159195-03-6, Spinosyn U 159195-04-7, Spinosyn V

159195-05-8, Spinosyn W 159195-06-9, Spinosyn Y

188483-41-2, Spinosyn A tartrate 188483-42-3, Spinosyn D

tartrate

RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); PRP (Properties); BIOL (Biological study); USES (Uses)

(phys. properties and insecticidal activity of spinosyns)

L12 ANSWER 22 OF 52 HCAPLUS COPYRIGHT 1999 ACS

AN 1996:683297 HCAPLUS

DN 126:59772

TI Diastereoselective synthesis of the trans-anti-cis-decahydro-as-indacene ring system via the transannular Diels-Alder reaction of a functionalized (E,E,E)-cyclododeca-1,6,8-triene

AU Roush, William R.; Works, Andrea B.

CS Dep. Chem., Indiana Univ., Bloomington, IN, 47405, USA

SO Tetrahedron Lett. (1996), 37(45), 8065-8068

CODEN: TELEAY; ISSN: 0040-4039

PB Elsevier

DT Journal

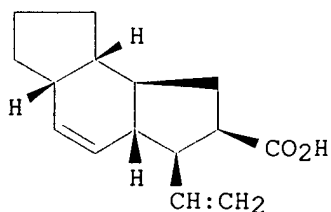
LA English

CC 26-6 (Biomolecules and Their Synthetic Analogs)

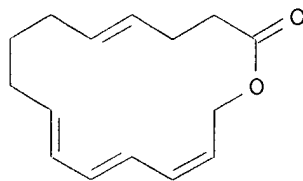
Section cross-reference(s): 29

OS CASREACT 126:59772

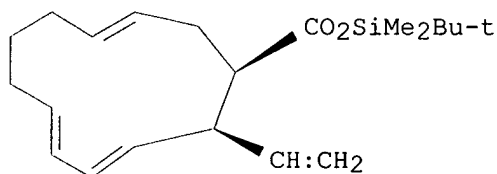
GI



I



II



III

AB A stereoselective synthesis of trans-anti-cis decahydro-as-indacene I is described. The key step of this synthesis is the tandem Claisen ring contraction of the 16-membered macrolactone II followed by the transannular Diels-Alder reaction of the resulting (E,E,E)-cyclododeca-1,6,8-triene III.

ST indacene decahydro prepn; transannular Diels Alder reaction  
cyclododecatriene prepn; enolate Claisen ring contraction macrolactone prepn; iron tricarbonyl complexed diene; diastereoselective synthesis decahydroindacene

IT Ring contraction  
Stereoselective synthesis  
(diastereoselective synthesis of the trans-anti-cis-decahydro-as-indacene ring system via the transannular Diels-Alder reaction of a functionalized (E,E,E)-cyclododeca-1,6,8-triene)

IT Macrolides  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(diastereoselective synthesis of the trans-anti-cis-decahydro-as-indacene ring system via the transannular Diels-Alder reaction of a functionalized (E,E,E)-cyclododeca-1,6,8-triene)

IT Claisen rearrangement  
(stereoselective; diastereoselective synthesis of the trans-anti-cis-decahydro-as-indacene ring system via the transannular Diels-Alder reaction of a functionalized (E,E,E)-cyclododeca-1,6,8-triene)

IT Diels-Alder reaction  
(transannular; diastereoselective synthesis of the trans-anti-cis-decahydro-as-indacene ring system via the transannular Diels-Alder reaction of a functionalized (E,E,E)-cyclododeca-1,6,8-triene)

IT 36531-78-9P, Ikarugamycin **131929-60-7P**, Lepicidin A  
RL: PNU (Preparation, unclassified); PREP (Preparation)  
(diastereoselective synthesis of the trans-anti-cis-decahydro-as-indacene ring system via the transannular Diels-Alder reaction of a functionalized (E,E,E)-cyclododeca-1,6,8-triene)

IT 79-09-4, Propanoic acid, reactions 1826-67-1, Vinyl magnesium bromide 20907-32-8 42516-28-9 50789-30-5, 5,5-Dimethoxypentanal 88738-78-7  
RL: RCT (Reactant)  
(diastereoselective synthesis of the trans-anti-cis-decahydro-as-indacene ring system via the transannular Diels-Alder reaction of a functionalized (E,E,E)-cyclododeca-1,6,8-triene)

IT 185139-17-7P 185139-18-8P 185139-20-2P 185139-21-3P 185139-22-4P

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185139-23-5P 185139-24-6P 185139-25-7P 185139-26-8P 185139-28-0P  
185139-29-1P 185139-30-4P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)  
(diastereoselective synthesis of the trans-anti-cis-decahydro-as-indacene ring system via the transannular Diels-Alder reaction of a functionalized (E,E,E)-cyclododeca-1,6,8-triene)

IT 185139-19-9P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(diastereoselective synthesis of the trans-anti-cis-decahydro-as-indacene ring system via the transannular Diels-Alder reaction of a functionalized (E,E,E)-cyclododeca-1,6,8-triene)

L12 ANSWER 23 OF 52 HCAPLUS COPYRIGHT 1999 ACS  
AN 1996:583999 HCAPLUS  
DN 125:214695  
TI Determination of the Naturally Derived Insect Control Agent Spinosad in Cottonseed and Processed Commodities by High-Performance Liquid Chromatography with Ultraviolet Detection  
AU West, Sheldon D.  
CS North American Environmental Chemistry Laboratory, DowElanco, Indianapolis, IN, 46268-1053, USA  
SO J. Agric. Food Chem. (1996), 44(10), 3170-3177  
CODEN: JAFCAU; ISSN: 0021-8561  
DT Journal  
LA English  
CC 5-1 (Agrochemical Bioregulators)  
Section cross-reference(s): 80

AB A method is described for the detn. of the naturally derived insect control agent spinosad in cottonseed and cottonseed processed commodities (meal, hulls, crude oil, refined oil, and soapstock). The method was validated over the concn. range 0.01-0.1 .mu.g/g, with a limit of quantitation of 0.01 .mu.g/g and a limit of detection of 0.003 .mu.g/g. Residues of the active ingredients in spinosad (spinosyns A and D) were extd. from samples with appropriate org. solvents. The extg. solvents were hexane for cottonseed oil, methylene chloride for soapstock, and 60% hexane/40% acetone for cottonseed, meal, or hulls. An aliquot of the ext. was purified by liq.-liq. partitioning and silica solid phase extn. Spinosyns A and D were detd. simultaneously in the purified exts. by reversed-phase HPLC with UV detection at 250 nm. Confirmation of residue identity was accomplished by reinjecting the same final soln. into the chromatograph under different chromatog. conditions.

ST spinosad detn cottonseed HPLC  
IT Cottonseed meal  
Cottonseed  
(detn. of spinosad in cottonseed and processed commodities by HPLC with UV detection)

IT Cottonseed oil  
RL: AMX (Analytical matrix); ANST (Analytical study)  
(detn. of spinosad in cottonseed and processed commodities by HPLC with UV detection)

IT Chromatography, column and liquid  
(high-performance reversed-phase, detn. of spinosad in cottonseed and processed commodities by HPLC with UV detection)

IT 131929-60-7, Spinosyn A 131929-63-0, Spinosyn D  
RL: ANT (Analyte); ANST (Analytical study)  
(detn. of spinosad in cottonseed and processed commodities by HPLC with UV detection)

L12 ANSWER 24 OF 52 HCAPLUS COPYRIGHT 1999 ACS  
AN 1996:433074 HCAPLUS  
DN 125:135391  
TI Chemistry and biology of the spinosyns: components of spinosad (Tracer), the first entry into Dow Elanco's naturalyte class of insect control products

- AU Sparks, Thomas C.; Kirst, Herbert A.; Mynderse, Jon S.; Thompson, Gary D.; Turner, Jan R.; Jantz, Orlo K.; Hertlein, Mark B.; Larson, Larry L.; Baker, Patrick J.; et al.
- CS Dow Elanco, Discovery, Indianapolis, IN, USA
- SO Proc. - Beltwide Cotton Conf. (1996), (Vol. 2), 692-696
- CODEN: PCOCEN; ISSN: 1059-2644
- DT Journal
- LA English
- CC 5-4 (Agrochemical Bioregulators)
- AB The spinosyns are a new genre of fermn.-derived mols. that contain a 12-membered macrocyclic lactone in a unique tetracyclic ring. More than 20 spinosyns (A-Y) have been identified and result from variations in substitution patterns on the two sugars (forosamine and 2',3',4'-tri-O-methylrhamnose) and the tetracyclic ring system. Changes in the substitution pattern on the forosamine nitrogen have little effect on the activity of the spinosyns to neonate tobacco budworm larvae, while loss of a Me group from the 2',3',4'-tri-O-methylrhamnose results in at least a 10-fold redn. in biol. activity. Loss of a Me group at C16 or C21 also reduces activity to neonate tobacco budworm larvae, while addn. of a Me group at C6 either has little effect or may slightly improve activity. The most active spinosyn identified to date to neonate tobacco budworm larvae is spinosyn A, which is also the principal component of spinosad (Tracer), a naturally occurring mixt. spinosyn A and spinosyn D.
- ST spinosyn spinosad Tracer tobacco budworm
- IT Heliothis virescens
- Insecticides
- (structure and insecticidal activity of spinosyns against tobacco budworm)
- IT Molecular structure-biological activity relationship
- (insecticidal, structure and insecticidal activity of spinosyns against tobacco budworm)
- IT 131929-60-7, Spinosyn A 131929-61-8, Spinosyn B  
131929-62-9, Spinosyn C 131929-63-0, Spinosyn D  
131929-64-1, Spinosyn E 131929-65-2, Spinosyn F  
131929-66-3, Spinosyn H 131929-67-4, Spinosyn J  
132016-82-1, Spinosyn G 149092-01-3, Spinosyn L  
149092-02-4, Spinosyn M 149092-03-5, Spinosyn N  
149438-28-8, Spinosyn Q 149438-29-9, Spinosyn R  
149438-30-2, Spinosyn T 149466-03-5, Spinosyn S  
159195-00-3, Spinosyn K 159195-01-4, Spinosyn O  
159195-02-5, Spinosyn P 159195-03-6, Spinosyn U  
159195-04-7, Spinosyn V 159195-05-8, Spinosyn W  
159195-06-9, Spinosyn Y 168316-95-8, Tracer
- RL: BAC (Biological activity or effector, except adverse); PRP (Properties); BIOL (Biological study)
- (structure and insecticidal activity of spinosyns against tobacco budworm)
- L12 ANSWER 25 OF 52 HCAPLUS COPYRIGHT 1999 ACS DUPLICATE 13
- AN 1996:340023 HCAPLUS
- DN 125:28238
- TI The aerobic soil degradation of spinosad - a novel natural insect control agent
- AU Hale, Kerry A.; Portwood, David E.
- CS Dow Elanco Europe, Letcombe Regis, Oxon., OX12 9JT, UK
- SO J. Environ. Sci. Health, Part B (1996), B31(3), 477-484
- CODEN: JPFCD2; ISSN: 0360-1234
- DT Journal
- LA English
- CC 5-4 (Agrochemical Bioregulators)
- Section cross-reference(s): 19
- AB Spinosad is comprised of two major components namely spinosyns A and D. The degrdn. of spinosad in soil under aerobic conditions was investigated using two U.S. soils (a silt loam and a sandy loam) which were treated
- KATHLEEN FULLER STIC LIBRARY 308-4290



with either 14C-spinosyn A or -spinosyn D. Further samples of soil were pre-sterilized prior to treatment in order to establish whether spinosyns A and D degrade abiotically. Flasks of treated soil were incubated in the dark at 25.degree. for up to one year after treatment. HPLC and LC-MS of soil exts. confirmed that the major degrdn. product of spinosyn A was spinosyn B, resulting from demethylation on the forosamine sugar. Other degradates were hydroxylation products of spinosyns A and B, with hydroxylation probably taking place on the aglycon portion of the mol. Half-lives were similar for both spinosyns and were in the range 9-17 days, with longer half lives in the pre-sterilized soils (128-240 days) suggesting that degrdn. was largely microbial.

ST aerobic soil degrdn spinosad

IT Soil pollution

(aerobic soil degrdn. of spinosad)

IT 131929-60-7, Spinosyn A 131929-63-0, Spinosyn D

168316-95-8, Spinosad

RL: AGR (Agricultural use); POL (Pollutant); BIOL (Biological study); OCCU (Occurrence); USES (Uses)

(aerobic soil degrdn. of)

IT 131929-61-8, Spinosyn B 149439-70-3, N-Demethylspinosyn D

177860-83-2 177860-84-3

RL: MFM (Metabolic formation); POL (Pollutant); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence)

(aerobic soil degrdn. product of spinosad)

L12 ANSWER 26 OF 52 BIOSIS COPYRIGHT 1999 BIOSIS

AN 1997:17081 BIOSIS

DN PREV199799316284

TI Laboratory evaluation of the novel naturally derived compound spinosad against *Ceratitis capitata*.

AU Adan, Angeles; Del Estal, Pedro; Budia, Flor; Gonzalez, Manuel; Vinuela, Elisa (1)

CS (1) Unidad Proteccion Cultivos, ETSI Agron., E-28040 Madrid Spain

SO Pesticide Science, (1996) Vol. 48, No. 3, pp. 261-268.

ISSN: 0031-613X.

DT Article

LA English

AB Laboratory studies were conducted to determine the effect of the naturally derived compound spinosad on *Ceratitis capitata* Wied. (Diptera, Tephritidae). The organophosphate fenthion was used as a standard. Direct dose-dependent mortality and reduced fecundity were observed in oral treatment of adults with spinosad. The LC-90 values 14 h and seven days after treatment were 19.50 and 0.49 mg liter-1 respectively. Fenthion was less active (the LC-50 eight days after treatment was 1.17 mg liter-1) and did not affect the fecundity of the fly. Adults were also very susceptible to spinosad and fenthion via residual contact. For spinosad, 100% mortality was recorded 48 h after treatment for a dose of 10 mg liter-1. Spinosad was more effective than fenthion in suppressing larval development when neonate larvae were reared on treated diet supplemented with a range of concentrations from 0.02 to 0.83 mg kg-1 diet. Last-instar larvae were much less susceptible to spinosad or fenthion when exposed via dipping or when they pupated in treated medium and both products had similar performance. A lack of ovicidal activity was observed in direct egg-treatments with spinosad but significant reductions from 1 mg liter-1 onwards were recorded for fenthion.

CC Biochemical Studies - General \*10060

Developmental Biology - Embryology - Morphogenesis, General \*25508

Physiology and Biochemistry of Bacteria \*31000

Pest Control, General; Pesticides; Herbicides \*54600

Economic Entomology - Fruits and Nuts \*60006

Economic Entomology - Biological Control \*60014

Economic Entomology - Chemical and Physical Control, General; Apparatus \*60016

Invertebrata, Comparative and Experimental Morphology, Physiology and

KATHLEEN FULLER STIC LIBRARY 308-4290

Pathology - Insecta - Pathology \*64078  
 BC Pseudonocardiaceae 08812  
 Diptera \*75314  
 IT Major Concepts  
     Biochemistry and Molecular Biophysics; Development; Economic  
     Entomology; Pathology; Pest Assessment Control and Management;  
     Physiology  
 IT Chemicals & Biochemicals  
     SPINOSAD; **SPINOSYN A**; **SPINOSYN D**; FENTHION  
 IT Miscellaneous Descriptors  
     ADULT; BIOBUSINESS; ECONOMIC ENTOMOLOGY; EGG; FENTHION; FRUIT PEST;  
     HORTICULTURE; **INSECTICIDE** POTENTIAL; **INSECTICIDES**;  
     LARVA; NOVEL NATURALLY DERIVED COMPOUND; PEST MANAGEMENT; PESTICIDES;  
     PUPA; SPINOSAD; **SPINOSYN A** AND **SPINOSYN D** MIXTURE;  
     **SPINOSYN** ORIGIN; XDE-105 CODE COMPOUND  
 ORGN Super Taxa  
     Bacteria - General Unspecified: Eubacteria, Bacteria; Diptera:  
     **Insecta**, Arthropoda, Invertebrata, Animalia; **Insecta**  
     - Unspecified: **Insecta**, Arthropoda, Invertebrata, Animalia;  
     Pseudonocardiaceae: Eubacteria, Bacteria  
 ORGN Organism Name  
     bacteria (Bacteria - General Unspecified); **insect** (  
     **Insecta** - Unspecified); microorganism (Microorganisms -  
     Unspecified); Ceratitis capitata (Diptera); Saccharopolyspora spinosa  
     (Pseudonocardiaceae)  
 ORGN Organism Superterms  
     animals; arthropods; bacteria; eubacteria; **insects**;  
     invertebrates; microorganisms  
 RN 168316-95-8 (SPINOSAD)  
     131929-60-7 (**SPINOSYN A**)  
     131929-63-0 (**SPINOSYN D**)  
     55-38-9 (FENTHION)  
 L12 ANSWER 27 OF 52 HCAPLUS COPYRIGHT 1999 ACS  
 AN 1997:87465 HCAPLUS  
 DN 126:128246  
 TI The aerobic and anaerobic degradation of spinosad - a novel natural insect  
     control agent  
 AU Reeves, G. L.; Hale, K. A.; Portwood, D. E.  
 CS DowElanco Europe, Letcombe Regis, Wantage, Oxfordshire, OX12 9JT, UK  
 SO Environ. Fate Xenobiot., Proc. Symp. Pestic. Chem., 10th (1996), 253-259.  
     Editor(s): Del Re, Attilio Amerigo Maria. Publisher: Goliardica Pavese,  
     Pavia, Italy.  
     CODEN: 63YDAM  
 DT Conference  
 LA English  
 CC 5-4 (Agrochemical Bioregulators)  
 AB Spinosad is a fermn. product consisting primarily of two  
     structurally-related compds. (spinosyns A and D), with biol. activity  
     against a range of insects. For registration purposes, aerobic soil and  
     anaerobic aquatic degrdn. studies using the major component, i.e. spinosyn  
     A, have been carried out to US EPA Guidelines. Under aerobic conditions  
     in soil, spinosyn A quickly degraded (t1/2 9-17 days) indicating that it  
     will not be considered persistent in soil. The degrdn. was longer in  
     sterile soil (t1/2 128 days) suggesting a largely microbial route. Under  
     anaerobic aquatic conditions in a water/sediment system, spinosyn A  
     quickly sorbed to the sediment after application, where much slower  
     breakdown then occurred (t1/2 161 days). The two studies gave different  
     metabolites, although N-demethylation of the forosamine sugar to give  
     spinosyn B was common to both showing that either aerobic or anaerobic  
     conditions can facilitate this degrdn.  
 ST spinosyn A degrdn soil water sediment  
 IT Sediment pollution  
     (spinosyn A aerobic and anaerobic degrdn. in sediment)

IT Soil pollution  
(spinosyn A aerobic and anaerobic degrdn. in soil)

IT Water pollution  
(spinosyn A aerobic and anaerobic degrdn. in water)

IT 131929-60-7, Spinosyn A  
RL: REM (Removal or disposal); PROC (Process)  
(aerobic and anaerobic degrdn. of)

IT 131929-61-8, Spinosyn B  
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)  
(spinosyn A aerobic and anaerobic degrdn. product)

IT 131929-67-4, Spinosyn J 186352-03-4  
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)  
(spinosyn A anaerobic degrdn. product)

L12 ANSWER 28 OF 52 BIOSIS COPYRIGHT 1999 BIOSIS  
AN 1996:252838 BIOSIS  
DN PREV199698808967  
TI Kinetics of **spinosyn** A degradation under field conditions.  
AU Peacock, A. L.; Saunders, D. G.; Powers, F. L.; Zabik, J. M.; Rainey, D.  
P.  
CS Environ. Chem. Lab., DowElanco, Indianapolis, IN 46268 USA  
SO Abstracts of Papers American Chemical Society, (1996) Vol. 211, No. 1-2,  
pp. AGRO 49.  
Meeting Info.: 211th American Chemical Society National Meeting New  
Orleans, Louisiana, USA March 24-28, 1996  
ISSN: 0065-7727.

DT Conference  
LA English  
CC General Biology - Symposia, Transactions and Proceedings of Conferences,  
Congresses, Review Annuals 00520  
Ecology; Environmental Biology - Bioclimatology and Biometeorology \*07504  
Biochemical Studies - General 10060  
Soil Science - Physics and Chemistry \*52805  
Pest Control, General; Pesticides; Herbicides \*54600

IT Major Concepts  
Climatology (Environmental Sciences); Pest Assessment Control and  
Management; Soil Science

IT Chemicals & Biochemicals  
SPINOSAD

IT Miscellaneous Descriptors  
**INSECTICIDE**; MEETING ABSTRACT; SEASONALITY; SOIL; SPINOSAD

RN 168316-95-8 (SPINOSAD)

L12 ANSWER 29 OF 52 BIOSIS COPYRIGHT 1999 BIOSIS  
AN 1996:252836 BIOSIS  
DN PREV199698808965  
TI Leaching potential of **spinosyn** A and degradates under laboratory  
and field conditions.  
AU Saunders, D. G.; Peacock, A. L.; Powers, F. L.; Zabik, J. M.  
CS Environ. Chem. Lab., DowElanco, Indianapolis, IN 46268 USA  
SO Abstracts of Papers American Chemical Society, (1996) Vol. 211, No. 1-2,  
pp. AGRO 47.  
Meeting Info.: 211th American Chemical Society National Meeting New  
Orleans, Louisiana, USA March 24-28, 1996  
ISSN: 0065-7727.

DT Conference  
LA English  
CC General Biology - Symposia, Transactions and Proceedings of Conferences,  
Congresses, Review Annuals 00520  
Biochemical Studies - General 10060  
Soil Science - Physics and Chemistry \*52805  
Pest Control, General; Pesticides; Herbicides \*54600

IT Major Concepts  
Pest Assessment Control and Management; Soil Science  
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IT Chemicals & Biochemicals  
SPINOSAD

IT Miscellaneous Descriptors  
ABSORPTION; DESORPTION; **INSECTICIDE**; MEETING ABSTRACT; SOIL;  
SPINOSAD; **SPINOSYN B**

RN 168316-95-8 (SPINOSAD)

L12 ANSWER 30 OF 52 BIOSIS COPYRIGHT 1999 BIOSIS  
AN 1996:252833 BIOSIS  
DN PREV199698808962  
TI Characterization of residues in cotton receiving multiple applications of  
14C **spinosyn A**.  
AU Magnussen, John D.; Castetter, Scott A.; Rainey, Donald P.  
CS DowElanco, North American Environ. Chem. Lab., Indianapolis, IN 46268 USA  
SO Abstracts of Papers American Chemical Society, (1996) Vol. 211, No. 1-2,  
pp. AGRO 44.  
Meeting Info.: 211th American Chemical Society National Meeting New  
Orleans, Louisiana, USA March 24-28, 1996  
ISSN: 0065-7727.

DT Conference  
LA English

CC General Biology - Symposia, Transactions and Proceedings of Conferences,  
Congresses, Review Annuals 00520  
Radiation - Radiation and Isotope Techniques 06504  
Biochemical Studies - General 10060  
Plant Physiology, Biochemistry and Biophysics - Translocation,  
Accumulation \*51520  
Agronomy - Fiber Crops \*52508  
Agronomy - Oil Crops \*52514  
Pest Control, General; Pesticides; Herbicides \*54600

BC Malvaceae \*26330

IT Major Concepts  
Agronomy (Agriculture); Pest Assessment Control and Management;  
Physiology

IT Chemicals & Biochemicals  
14C; CARBON-14; SPINOSAD

IT Miscellaneous Descriptors  
ACCUMULATION; AGRICULTURE; CARBON-14 LABEL; FIBER; **INSECTICIDE**  
; MEETING ABSTRACT; SEED; SPINOSAD

ORGN Super Taxa  
Malvaceae: Dicotyledones, Angiospermae, Spermatophyta, Plantae

ORGN Organism Name  
Malvaceae (Malvaceae)

ORGN Organism Superterms  
angiosperms; dicots; plants; spermatophytes; vascular plants

RN 126184-84-7 (14C)  
14762-75-5 (CARBON-14)  
168316-95-8 (SPINOSAD)

L12 ANSWER 31 OF 52 BIOSIS COPYRIGHT 1999 BIOSIS  
AN 1996:252832 BIOSIS  
DN PREV199698808961  
TI Characterization of spinosad related residues in poultry tissues and eggs  
following oral administration.  
AU Magnussen, John D.; Castetter, Scott A.; Rainey, Donald P.  
CS DowElanco, North American Environ. Chem. Lab., Indianapolis, IN 46268 USA  
SO Abstracts of Papers American Chemical Society, (1996) Vol. 211, No. 1-2,  
pp. AGRO 43.  
Meeting Info.: 211th American Chemical Society National Meeting New  
Orleans, Louisiana, USA March 24-28, 1996  
ISSN: 0065-7727.

DT Conference  
LA English

CC General Biology - Symposia, Transactions and Proceedings of Conferences,  
KATHLEEN FULLER STIC LIBRARY 308-4290

Congresses, Review Annuals 00520  
 Biochemical Studies - General 10060  
 Biochemical Studies - Carbohydrates 10068  
 Biophysics - Molecular Properties and Macromolecules 10506  
 Digestive System - Physiology and Biochemistry \*14004  
 Reproductive System - Physiology and Biochemistry \*16504  
 Muscle - Physiology and Biochemistry \*17504  
 Bones, Joints, Fasciae, Connective and Adipose Tissue - Physiology and Biochemistry \*18004  
 Dental and Oral Biology - General; Methods 19001  
 Routes of Immunization, Infection and Therapy \*22100  
 Animal Production - Feeds and Feeding \*26504  
 Poultry Production - General; Methods \*27002  
 Pest Control, General; Pesticides; Herbicides \*54600  
 BC Galliformes \*85536  
 IT Major Concepts  
     Animal Husbandry (Agriculture); Digestive System (Ingestion and Assimilation); Methods and Techniques; Muscular System (Movement and Support); Pest Assessment Control and Management; Reproductive System (Reproduction); Skeletal System (Movement and Support)  
 IT Chemicals & Biochemicals  
     FOROSAMINE  
 IT Industry  
     poultry industry  
 IT Miscellaneous Descriptors  
     FAT; FEED RESIDUES; FOROSAMINE SUGAR; **INSECTICIDE**; LIVER; MEETING ABSTRACT; MUSCLE; N-DEMETHYLATION; O-DEMETHYLATION; **SPINOSYN A**; **SPINOSYN D**  
 ORGN Super Taxa  
     Galliformes: Aves, Vertebrata, Chordata, Animalia  
 ORGN Organism Name  
     Galliformes (Galliformes)  
 ORGN Organism Superterms  
     animals; birds; chordates; nonhuman vertebrates; vertebrates  
 RN 18423-27-3 (FOROSAMINE)  
  
 L12 ANSWER 32 OF 52 BIOSIS COPYRIGHT 1999 BIOSIS  
 AN 1996:252834 BIOSIS  
 DN PREV199698808963  
 TI The tissue distribution and metabolism of **spinosyn** A and D in lactating goats.  
 AU Rainey, Donald P.; O'Neill, Jerry D.; Castetter, Scott A.  
 CS DowElanco, North American Environ. Chem. Lab., Indianapolis, IN 46268 USA  
 SO Abstracts of Papers American Chemical Society, (1996) Vol. 211, No. 1-2, pp. AGRO 45.  
 Meeting Info.: 211th American Chemical Society National Meeting New Orleans, Louisiana, USA March 24-28, 1996  
 ISSN: 0065-7727.  
 DT Conference  
 LA English  
 CC General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals 00520  
 Biochemical Studies - General 10060  
 Biochemical Studies - Carbohydrates 10068  
 Biophysics - Molecular Properties and Macromolecules 10506  
 Metabolism - General Metabolism; Metabolic Pathways \*13002  
 Digestive System - Physiology and Biochemistry \*14004  
 Urinary System and External Secretions - Physiology and Biochemistry \*15504  
 Reproductive System - Physiology and Biochemistry \*16504  
 Muscle - Physiology and Biochemistry \*17504  
 Bones, Joints, Fasciae, Connective and Adipose Tissue - Physiology and Biochemistry \*18004  
 Animal Production - Feeds and Feeding \*26504  
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Pest Control, General; Pesticides; Herbicides \*54600  
BC Bovidae \*85715  
IT Major Concepts  
Animal Husbandry (Agriculture); Digestive System (Ingestion and Assimilation); Metabolism; Muscular System (Movement and Support); Pest Assessment Control and Management; Reproductive System (Reproduction); Skeletal System (Movement and Support); Urinary System (Chemical Coordination and Homeostasis)  
IT Chemicals & Biochemicals  
SPINOSAD; FOROSAMINE  
IT Industry  
livestock industry  
IT Miscellaneous Descriptors  
FAT; FEED RESIDUES; FOROSAMINE SUGAR; HYDROXYLATION;  
**INSECTICIDE**; KIDNEY; LIVER; MEETING ABSTRACT; MILK; MUSCLE;  
N-DEMETHYLATION; SPINOSAD  
ORGN Super Taxa  
Bovidae: Artiodactyla, Mammalia, Vertebrata, Chordata, Animalia  
ORGN Organism Name  
Bovidae (Bovidae)  
ORGN Organism Superterms  
animals; artiodactyls; chordates; mammals; nonhuman vertebrates;  
nonhuman mammals; vertebrates  
RN 168316-95-8 (SPINOSAD)  
18423-27-3 (FOROSAMINE)  
  
L12 ANSWER 33 OF 52 BIOSIS COPYRIGHT 1999 BIOSIS  
AN 1996:252835 BIOSIS  
DN PREV199698808964  
TI Degradation products of **spinosyn** A under field conditions.  
AU Rainey, D. P.; O'Neill, J. D.; Saunders, D. G.; Powers, F. L.; Zabik, J. M.; Babbitt, G. E.  
CS Environ. Chem. Lab., DowElanco, Indianapolis, IN 46268 USA  
SO Abstracts of Papers American Chemical Society, (1996) Vol. 211, No. 1-2, pp. AGRO 46.  
Meeting Info.: 211th American Chemical Society National Meeting New Orleans, Louisiana, USA March 24-28, 1996  
ISSN: 0065-7727.  
DT Conference  
LA English  
CC General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals 00520  
Biochemistry - Gases \*10012  
Biochemical Studies - General 10060  
External Effects - Light and Darkness \*10604  
Soil Science - Physics and Chemistry \*52805  
Pest Control, General; Pesticides; Herbicides \*54600  
IT Major Concepts  
Biochemistry and Molecular Biophysics; Pest Assessment Control and Management; Physiology; Soil Science  
IT Chemicals & Biochemicals  
SPINOSAD  
IT Miscellaneous Descriptors  
AEROBIC METABOLISM; **INSECTICIDE**; MEETING ABSTRACT;  
PHOTODEGRADATION; SOIL; SPINOSAD; **SPINOSYN** B  
RN 168316-95-8 (SPINOSAD)  
  
L12 ANSWER 34 OF 52 BIOSIS COPYRIGHT 1999 BIOSIS  
AN 1996:252831 BIOSIS  
DN PREV199698808960  
TI Dissipation of spinosad from an aquatic microcosm.  
AU McGibbon, A. S.; Powers, F. L.; Robb, C. K.; Langer, W. F.; Young, D. L.; Mihaliak, C. A.; Saunders, D. G.  
CS Environ. Chem. Lab., DowElanco, Indianapolis, IN 46268 USA  
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..  
SO Abstracts of Papers American Chemical Society, (1996) Vol. 211, No. 1-2,  
pp. AGRO 42.  
Meeting Info.: 211th American Chemical Society National Meeting New  
Orleans, Louisiana, USA March 24-28, 1996  
ISSN: 0065-7727.  
DT Conference  
LA English  
CC General Biology - Symposia, Transactions and Proceedings of Conferences,  
Congresses, Review Annuals 00520  
Radiation - Radiation and Isotope Techniques 06504  
Ecology; Environmental Biology - Limnology \*07514  
Biochemical Studies - General 10060  
Immunology and Immunochemistry - General; Methods 34502  
Soil Science - Physics and Chemistry \*52805  
Pest Control, General; Pesticides; Herbicides \*54600  
IT Major Concepts  
Freshwater Ecology (Ecology, Environmental Sciences); Pest Assessment  
Control and Management; Soil Science  
IT Chemicals & Biochemicals  
SPINOSAD  
IT Miscellaneous Descriptors  
ANALYTICAL METHOD; IMMUNOASSAY; **INSECTICIDE**; MEETING  
ABSTRACT; SEDIMENT; **SPINOSYN A**; **SPINOSYN D**  
RN 168316-95-8 (SPINOSAD)  
  
L12 ANSWER 35 OF 52 BIOSIS COPYRIGHT 1999 BIOSIS  
AN 1996:252830 BIOSIS  
DN PREV199698808959  
TI The role of photolysis in the formation of spinosad residues on apple  
leaves and fruit.  
AU Berard, David F.; Graper, Lewis K.  
CS DowElanco, North American Environ. Chem. Lab., Indianapolis, IN 46268 USA  
SO Abstracts of Papers American Chemical Society, (1996) Vol. 211, No. 1-2,  
pp. AGRO 41.  
Meeting Info.: 211th American Chemical Society National Meeting New  
Orleans, Louisiana, USA March 24-28, 1996  
ISSN: 0065-7727.  
DT Conference  
LA English  
CC General Biology - Symposia, Transactions and Proceedings of Conferences,  
Congresses, Review Annuals 00520  
Biochemical Studies - General 10060  
External Effects - Light and Darkness 10604  
Plant Physiology, Biochemistry and Biophysics - Light and Radiation  
Effects \*51516  
Plant Physiology, Biochemistry and Biophysics - Translocation,  
Accumulation \*51520  
Horticulture - Temperate Zone Fruits and Nuts \*53002  
Pest Control, General; Pesticides; Herbicides \*54600  
BC Rosaceae \*26675  
IT Major Concepts  
Horticulture (Agriculture); Pest Assessment Control, and Management;  
Physiology; Radiation Biology  
IT Chemicals & Biochemicals  
SPINOSAD  
IT Miscellaneous Descriptors  
ACCUMULATION; AGRICULTURE; **INSECTICIDE**; MEETING ABSTRACT;  
**SPINOSYN A**; **SPINOSYN D**  
ORGN Super Taxa  
Rosaceae: Dicotyledones, Angiospermae, Spermatophyta, Plantae  
ORGN Organism Name  
Rosaceae (Rosaceae)  
ORGN Organism Superterms  
angiosperms; dicots; plants; spermatophytes; vascular plants  
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RN 168316-95-8 (SPINOSAD)

L12 ANSWER 36 OF 52 BIOSIS COPYRIGHT 1999 BIOSIS  
AN 1996:252829 BIOSIS  
DN PREV199698808958  
TI Characterization of spinosad residues in cabbage from single and repeat applications.  
AU Berard, David F.; Santonin, Darlene K.  
CS DowElanco, North American Environ. Chem. Lab., Indianapolis, IN 46268 USA  
SO Abstracts of Papers American Chemical Society, (1996) Vol. 211, No. 1-2, pp. AGRO 40.  
Meeting Info.: 211th American Chemical Society National Meeting New Orleans, Louisiana, USA March 24-28, 1996  
ISSN: 0065-7727.  
DT Conference  
LA English  
CC General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals 00520  
Ecology; Environmental Biology - Bioclimatology and Biometeorology \*07504  
Ecology; Environmental Biology - Plant \*07506  
Biochemical Studies - General 10060  
Biophysics - Molecular Properties and Macromolecules 10506  
Plant Physiology, Biochemistry and Biophysics - Growth, Differentiation \*51510  
Plant Physiology, Biochemistry and Biophysics - Translocation, Accumulation \*51520  
Horticulture - Vegetables \*53008  
Pest Control, General; Pesticides; Herbicides \*54600  
BC Cruciferae \*25880  
IT Major Concepts  
Climatology (Environmental Sciences); Development; Ecology (Environmental Sciences); Horticulture (Agriculture); Pest Assessment Control and Management; Physiology  
IT Chemicals & Biochemicals  
SPINOSAD  
IT Miscellaneous Descriptors  
ACCUMULATION; AGRICULTURE; GROWTH; **INSECTICIDE**; MEETING  
ABSTRACT; N-DEMETHYLATION; O-DEMETHYLATION; **SPINOSYN A**; **SPINOSYN D**; WEATHER  
ORGN Super Taxa  
Cruciferae: Dicotyledones, Angiospermae, Spermatophyta, Plantae  
ORGN Organism Name  
Cruciferae (Cruciferae)  
ORGN Organism Superterms  
angiosperms; dicots; plants; spermatophytes; vascular plants  
RN 168316-95-8 (SPINOSAD)

L12 ANSWER 37 OF 52 HCAPLUS COPYRIGHT 1999 ACS  
AN 1995:790409 HCAPLUS  
DN 123:220801  
TI Biological characteristics of the spinosyns: a new naturally derived insect control agents  
AU Sparks, T. C.; Thompson, G. D.; Larson, L. L.; Kirst, H. A.; Jantz, O. K.; Worden, T. V.; Hertlein, M. B.; Busacca, J. D.  
CS DowElanco, Indianapolis, IN, USA  
SO Proc. - Beltwide Cotton Conf. (1995), Volume Date 1995, 2 903-7  
CODEN: PCOCEN; ISSN: 1059-2644  
DT Journal  
LA English  
CC 5-4 (Agrochemical Bioregulators)  
Section cross-reference(s): 10  
AB The spinosyns are a new class of fermn.-derived tetracyclic macrolides that act via the insect nervous system through a unique mode of action. They are esp. active against a variety of lepidopterous pests and yet  
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possess very favorable mammalian toxicity and environmental profiles. Spinosad (proposed common name) is a naturally occurring mixt. of spinosyn A and D. Spinosad is very effective against larvae of *Heliothis virescens* (F.), the tobacco budworm, with activity in the range of some pyrethroids. Available information indicates that spinosyn A and spinosad are effective on a variety of insecticide-resistant field and lab. strains, with no evidence to date of cross-resistance.

ST spinosyn insecticide *Heliothis* control; tobacco budworm control spinosyn insecticide

IT Insecticides  
(Spinosad and Spinosyn A as)

IT *Heliothis virescens*  
(Spinosad and Spinosyn A effect on)

IT 131929-60-7 131929-63-0 168316-95-8, Spinosad  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BIOL (Biological study); USES (Uses)  
(insecticidal activity against *Heliothis*)

L12 ANSWER 38 OF 52 BIOSIS COPYRIGHT 1999 BIOSIS  
AN 1995:422020 BIOSIS  
DN PREV199598436320  
TI Chemistry and biology of the spinosyns: A new class of naturally derived insect control agents.

AU Kirst, Herbert A. (1); Sparks, Thoams C.; Mynderse, Jon S. (1); Thompson, Gary D.; Turner, Jan R. (1); Jantz, Orlo K.; Hertlein, Mark B.; Larson, Larry L.; Broughten, M. Chris; Busacca, John D.; Creemer, Lawrence C. (1); Huber, Mary L. (1); Martin, James W. (1); Nakatsukasa, Walter M.  
CS (1) Lilly Res. Lab., Eli Lilly Co., Indianapolis, IN 46285 USA  
SO Abstracts of Papers American Chemical Society, (1995) Vol. 210, No. 1-2, pp. AGRO 61.  
Meeting Info.: 210th American Chemical Society National Meeting Chicago, Illinois, USA August 20-24, 1995  
ISSN: 0065-7727.

DT Conference  
LA English  
CC General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals 00520  
Biochemical Studies - General \*10060  
Biophysics - Molecular Properties and Macromolecules \*10506  
Physiology and Biochemistry of Bacteria \*31000  
Food and Industrial Microbiology - Biosynthesis, Bioassay and Fermentation \*39007  
Pest Control, General; Pesticides; Herbicides \*54600

BC Pseudonocardiaceae \*08812  
IT Major Concepts  
Biochemistry and Molecular Biophysics; Bioprocess Engineering; Pest Assessment Control and Management; Physiology

IT Chemicals & Biochemicals  
SPINOSAD

IT Miscellaneous Descriptors  
AGROCHEMISTRY; FERMENTATION; INSECTICIDE; MEETING ABSTRACT;  
SPINOSAD; SPINOSYN A; SPINOSYN D

ORGN Super Taxa  
Pseudonocardiaceae: Eubacteria, Bacteria

ORGN Organism Name  
Saccharopolyspora spinosa (Pseudonocardiaceae)

ORGN Organism Superterms  
bacteria; eubacteria; microorganisms

RN 168316-95-8 (SPINOSAD)

L12 ANSWER 39 OF 52 BIOSIS COPYRIGHT 1999 BIOSIS  
AN 1995:422012 BIOSIS  
DN PREV199598436312  
TI Photodegradation of spinosad on soil.

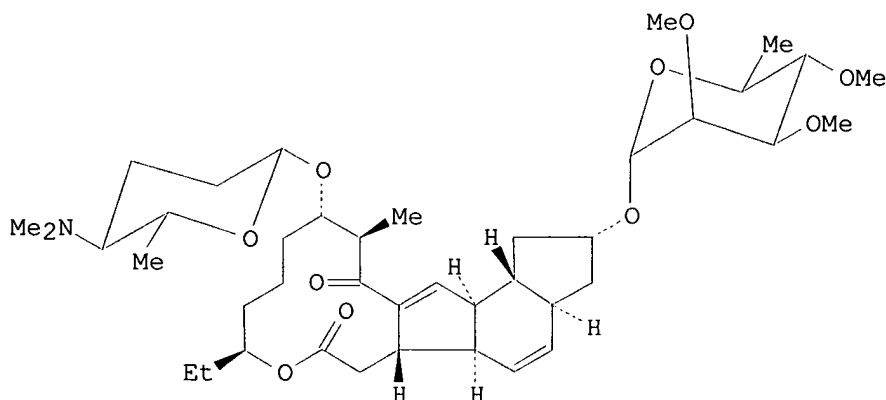
AU Saunders, D. G.; Powers, F. L.; Peacock, A. L.  
 CS Environ. Chem. Lab., DowElanco, Indianapolis, IN 46268 USA  
 SO Abstracts of Papers American Chemical Society, (1995) Vol. 210, No. 1-2,  
 pp. AGRO 53.  
 Meeting Info.: 210th American Chemical Society National Meeting Chicago,  
 Illinois, USA August 20-24, 1995  
 ISSN: 0065-7727.  
 DT Conference  
 LA English  
 CC General Biology - Symposia, Transactions and Proceedings of Conferences,  
 Congresses, Review Annuals 00520  
 Biochemical Studies - General \*10060  
 Biophysics - Molecular Properties and Macromolecules \*10506  
 External Effects - Light and Darkness 10604  
 Soil Science - Physics and Chemistry \*52805  
 Pest Control, General; Pesticides; Herbicides \*54600  
 IT Major Concepts  
 Biochemistry and Molecular Biophysics; Pest Assessment Control and  
 Management; Soil Science  
 IT Chemicals & Biochemicals  
 SPINOSAD  
 IT Miscellaneous Descriptors  
 AGROCHEMISTRY; **INSECTICIDE**; MEETING ABSTRACT;  
**SPINOSYN A**; **SPINOSYN D**  
 RN 168316-95-8 (SPINOSAD)

L12 ANSWER 40 OF 52 HCAPLUS COPYRIGHT 1999 ACS  
 AN 1994:699304 HCAPLUS  
 DN 121:299304  
 TI New A83543 compounds and process for production thereof  
 IN Mynderse, Jon S.; Baker, Patrick J.; Mabe, James A.; Turner, Jan R.;  
 Huber, Mary L. B.; Broughton, Mary C.; Nakatsukasa, Walter M.; Creemer,  
 Lawrence; Kirst, Herbert A.; Martin, James W.  
 PA DOWELANCO, USA  
 SO PCT Int. Appl., 116 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 IC ICM C07H017-08  
 ICS C12P019-62; A01N043-22  
 CC 16-2 (Fermentation and Bioindustrial Chemistry)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9420518	A1	19940915	WO 94-US2674	19940311
	W: AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, ES, FI, GB, HU,				
	JP, KP, KR, KZ, LK, LU, LV, MG, MN, MW, NL, NO, NZ, PL, PT, RO,				
	RU, SD, SE, SI, SK, UA, UZ, VN				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2156194	AA	19940915	CA 94-2156194	19940311
	AU 9465187	A1	19940926	AU 94-65187	19940311
	AU 685107	B2	19980115		
	EP 688332	A1	19951227	EP 94-912774	19940311
	EP 688332	B1	19970326		
	R: AT, CH, DE, DK, ES, FR, GB, IT, LI, NL				
	BR 9406587	A	19960102	BR 94-6587	19940311
	JP 08507533	T2	19960813	JP 94-520341	19940311
	AT 150758	E	19970415	AT 94-912774	19940311
	ES 2099604	T3	19970516	ES 94-912774	19940311
	US 5840861	A	19981124	US 95-385497	19950208
	US 5670364	A	19970923	US 95-474026	19950607
	US 5670486	A	19970923	US 95-483440	19950607
	FI 9504246	A	19950911	FI 95-4246	19950911
PRAI	US 93-30522		19930312		

WO 94-US2674 19940311  
US 95-385497 19950208  
OS MARPAT 121:299304  
AB New A83543 components, including fermn. products A83543K, A83543O, A83543P, A83543U, A83543V, A83543W, A83543Y, and N-demethyl derivs. and salts thereof are useful for the control of insects and mites. The pseudoaglycones of the new A83543 components are useful for the prepn. of A83543 components. Methods are provided for making the new A83543 components by culturing *Saccharopolyspora spinosa* NRRL 18395, 18537, 18538, 18539, 18473, 18719, or 18823 in suitable culture media. Insecticidal and ectoparasitocidal compns. contg. new A83543 components are also disclosed.  
ST tetracyclic lactone insecticide miticide *Saccharopolyspora*  
IT Fermentation  
*Saccharopolyspora spinosa*  
(A83543 compds. from *Saccharopolyspora spinosa*)  
IT Acaricides  
Insecticides  
(A83543 compds. from *Saccharopolyspora spinosa* as)  
IT *Aphis gossypii*  
*Blattella germanica*  
*Diabrotica undecimpunctata howardi*  
*Heliothis virescens*  
*Macrosteles fascifrons*  
*Meloidogyne*  
Mite and Tick  
*Spodoptera exigua*  
*Tetranychus urticae*  
(A83543 compds. from *Saccharopolyspora spinosa* inhibition of)  
IT 17212-17-8, 2-O-Methyl-D-rhamnose 17212-18-9 159169-51-4  
RL: BOC (Biological occurrence); BIOL (Biological study); OCCU (Occurrence)  
(in A83543 compds. from *Saccharopolyspora spinosa*)  
IT 58944-73-3, Sinefungin  
RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)  
(in A83543 compds. prodn. by *Saccharopolyspora spinosa*)  
IT 159195-00-3P, A 83543K 159195-01-4P, A 83543O  
159195-02-5P, A 83543P 159195-03-6P, A 83543U  
159195-04-7P, A 83543V 159195-05-8P, A 83543W  
159195-06-9P, A 83543Y  
RL: AGR (Agricultural use); BMF (Bioindustrial manufacture); PRP (Properties); PUR (Purification or recovery); RCT (Reactant); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(new A83543 compds. and prodn. thereof)  
IT 159059-20-8P  
RL: AGR (Agricultural use); PRP (Properties); PUR (Purification or recovery); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(new A83543 compds. and prodn. thereof)  
IT 159059-13-9P 159059-14-0P 159059-21-9P  
RL: PRP (Properties); PUR (Purification or recovery); SPN (Synthetic preparation); PREP (Preparation)  
(new A83543 compds. and prodn. thereof)  
IT 159059-15-1P 159059-16-2P 159059-17-3P 159059-18-4P 159059-19-5P  
159059-22-0P 159059-23-1P 159059-24-2P 159059-25-3P 159059-26-4P  
159059-27-5P 159059-28-6P 159059-29-7P 159059-30-0P 159059-31-1P  
159059-32-2P 159059-33-3P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(new A83543 compds. and prodn. thereof)

DN 121:8991  
 TI Chemistry of A83543A Derivatives. 1. Oxidations and Reductions of A83543A Aglycon  
 AU Martynow, Jacek G.; Kirst, Herbert A.  
 CS Lilly Research Laboratories, Eli Lilly and Company, Indianapolis, IN, 46285, USA  
 SO J. Org. Chem. (1994), 59(6), 1548-60  
 CODEN: JOCEAH; ISSN: 0022-3263  
 DT Journal  
 LA English  
 CC 26-9 (Biomolecules and Their Synthetic Analogs)  
 Section cross-reference(s): 33  
 OS CASREACT 121:8991  
 GI



I

AB A retro-biomimetic degrdn. of the tetracyclic ring system of A83543, I, was investigated as one approach to obtaining putative polyketide-derived, late-stage biosynthetic precursors for the subsequent study of their cyclizations. However, initial studies revealed an unexpected chem. stability of the ring system that required the development of indirect methods to cleave the ring-forming bonds. Hydride reagents were esp. useful for reductively cleaving the lactone and generating novel derivs., whose structures and stereochemistries were detd. by detailed NMR analyses correlated with results from mol. modeling. The latter were also used to rationalize the conformational behaviors and lack of reactivities exhibited by the macrocyclic lactone systems in the parent and 13,14-enone-reduced derivs.  
 ST A83543A aglycon redn oxidn  
 IT Oxidation  
 Reduction  
 (of A83543A aglycon)  
 IT **131929-60-7**, A 83543A  
 RL: RCT (Reactant)  
 (hydrolysis, in oxidns. and redns. of A83543A aglycon)  
 IT 149560-97-4  
 RL: RCT (Reactant)  
 (oxidn. and redn.)  
 IT 155189-92-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and deprotection)  
 IT 155189-78-9P 155189-91-6P 155320-85-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and oxidn.)  
 IT 155189-82-5P 155320-83-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and reactions)

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IT 155189-77-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. and redn.)

IT 155189-79-0P 155189-80-3P 155189-81-4P 155189-83-6P 155189-84-7P  
 155189-85-8P 155189-86-9P 155189-87-0P 155189-88-1P 155189-89-2P  
 155189-90-5P 155189-93-8P 155189-94-9P 155320-84-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)

L12 ANSWER 42 OF 52 HCAPLUS COPYRIGHT 1999 ACS

AN 1993:515482 HCAPLUS

DN 119:115482

TI New A83543 compounds, their manufacture with Saccharopolyspora spinosa, and their use as insecticides and miticides

IN Creemer, Lawrence; Kirst, Herbert A.; Mynderse, Jon S.; Broughton, Mary C.; Huber, Mary L. B.; Martin, James W.; Turner, Jan R.

PA Dowelanco, USA

SO PCT Int. Appl., 89 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C07H017-08

ICS C12P019-62; C12N001-20; A01N043-22

ICI C12N001-20, C12R001-01; C12P019-62, C12R001-01

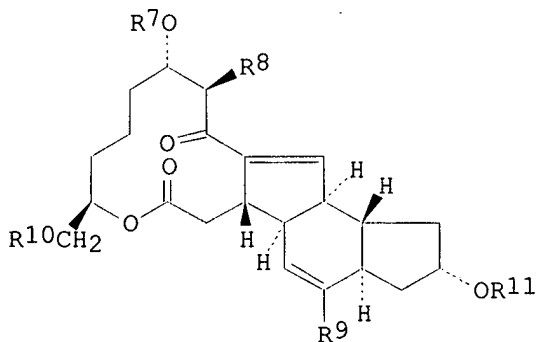
CC 16-2 (Fermentation and Bioindustrial Chemistry)

Section cross-reference(s): 5

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9309126	A1	19930513	WO 92-US9684	19921109
	W: AU, BR, CA, JP, RU, SD, UA				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, SE				
	US 5202242	A	19930413	US 91-790287	19911108
	CN 1073483	A	19930623	CN 92-114318	19921107
	AU 9331318	A1	19930607	AU 93-31318	19921109
	AU 666900	B2	19960229		
	EP 573628	A1	19931215	EP 92-925146	19921109
	EP 573628	B1	19990120		
	R: DE, ES, FR, GB, GR, IT, NL				
	BR 9205458	A	19940531	BR 92-5458	19921109
	JP 06506477	T2	19940721	JP 93-508775	19921109
	US 5539089	A	19960723	US 94-301835	19940907
PRAI	US 91-790282		19911108		
	US 91-790287		19911108		
	US 91-790616		19911108		
	WO 92-US9684		19921109		
	US 93-137697		19931015		

GI



AB New A83543 compds. (I; R7=H, amino sugar; R8-R10=H, Me; R11=H, neutral sugar) are manufd. with *S. spinosa* mutants for use as insecticides, miticides, or ectoparasiticides. By fermn. with A83543J- or A83543Q-producing *S. spinosa* mutant, seven A83543 compds. were manufd. Also N-demethyl A83543D was prepd. from A83543D by reaction with I2 in the presence of an inert solvent and a weak base. Also shown was the prepn. of pseudoaglycones from I by removal of the amino sugar with an acid, esp. sulfuric acid.

ST A83543 compd insecticide miticide ectoparasiticide Saccharopolyspora; pseudoaglycone A83543 compd Saccharopolyspora

IT Fermentation  
(A83543 compds., with Saccharopolyspora spinosa mutants)

IT Acaricides  
Insecticides  
(from Saccharopolyspora spinosa mutants, A83543 compds. as)

IT Saccharopolyspora spinosa  
(mutants, A83543 compds. manuf. with)

IT Parasiticides  
(ecto-, from Saccharopolyspora spinosa mutants, A83543 compds. as)

IT 7664-93-9, Sulfuric acid, uses  
RL: BIOL (Biological study)  
(in pseudoaglycones prepn. from A83543 compds.)

IT 149092-01-3P, A 83543L 149092-02-4P, A 83543M  
149092-03-5P, A 83543N 149438-28-8P, A 83543Q  
149438-29-9P, A 83543R 149438-30-2P, A 83543T  
149466-03-5P, A 83543S  
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP  
(Preparation)  
(manuf. of, with Saccharopolyspora spinosa mutant, for use as insecticides or miticides or ectoparasiticides)

IT 149092-05-7P 149439-75-8P 149439-76-9P 149439-77-0P 149439-78-1P  
149439-79-2P 149439-80-5P 149439-81-6P 149439-82-7P 149466-30-8P  
149560-97-4P  
RL: PREP (Preparation)  
(prepn. of)

IT 149439-70-3P  
RL: PREP (Preparation)  
(prepn. of, from A83543D by incubation with iodine, for use as insecticides or miticides or ectoparasiticides)

IT 149439-71-4P  
RL: PREP (Preparation)  
(prepn. of, from A83543J)

IT 149439-72-5P  
RL: PREP (Preparation)  
(prepn. of, from A83543L)

IT 149439-73-6P  
RL: PREP (Preparation)  
(prepn. of, from A83543M)

IT 149439-74-7P  
RL: PREP (Preparation)  
(prepn. of, from A83543N)

L12 ANSWER 43 OF 52 HCAPLUS COPYRIGHT 1999 ACS

AN 1993:558362 HCAPLUS

DN 119:158362

TI Process for isolating A83543 compounds from fermentation broth

IN Baker, Patrick J.

PA DowElanco, USA

SO U.S., 9 pp.

CODEN: USXXAM

DT Patent

LA English

IC ICM C12P019-60

ICS C12P019-62; C12R001-01

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NCL 435076000

CC 16-2 (Fermentation and Bioindustrial Chemistry)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5227295	A	19930713	US 91-790283	19911108
	WO 9423056	A1	19941013	WO 93-US3207	19930406
	W: AU, BB, BG, BR, CA, CZ, FI, HU, JP, KR, LK, MG, MN, MW, NO, NZ, PL, RO, RU, SD, SK, UA, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9340469	A1	19941024	AU 93-40469	19930406
PRAI	US 91-790283		19911108		
	WO 93-US3207		19930406		
AB	The process comprises extn. of the A83543 compds. (I) from a fermn. broth of Saccharopolyspora spinosa with a water miscible org. solvent such as acetone, adjustment the ext. to pH 7-13, chromatog. on a nonfunctional macroreticular polymer, elution of I with a water miscible org. solvent, and collection of I.				
ST	A83543 compd Saccharopolyspora isolation				
IT	Saccharopolyspora spinosa				
	(A83543 compds. isolation from fermn. broth of, process for)				
IT	Liquors, industrial				
	(corn steep, in culture of Saccharopolyspora spinosa, process for isolation of A83543 compds. from fermn. broth in relation to)				
IT	Soybean meal				
	(digested, in culture of Saccharopolyspora spinosa, process for isolation of A83543 compds. from fermn. broth in relation to)				
IT	Caseins, biological studies				
	RL: BIOL (Biological study)				
	(enzyme-hydrolyzed, in culture of Saccharopolyspora spinosa, process for isolation of A83543 compds. from fermn. broth in relation to)				
IT	Yeast				
	(ext., in culture of Saccharopolyspora spinosa, process for isolation of A83543 compds. from fermn. broth in relation to)				
IT	Antifoaming agents				
	(in culture of Saccharopolyspora spinosa, process for isolation of A83543 compds. from fermn. broth in relation to)				
IT	Oils				
	Soybean oil				
	RL: BIOL (Biological study)				
	(in culture of Saccharopolyspora spinosa, process for isolation of A83543 compds. from fermn. broth in relation to)				
IT	Polymers, biological studies				
	RL: BIOL (Biological study)				
	(nonfunctional macroreticular, in isolation of A83543 compds. from fermn. broth of Saccharopolyspora spinosa)				
IT	Milk				
	(peptonized, in culturing Saccharopolyspora spinosa, process for isolating A83543 compds. from fermn. broth in relation to)				
IT	Meat extracts				
	(beef, in culture of Saccharopolyspora spinosa, process for isolation of A83543 compds. from fermn. broth in relation to)				
IT	Filters and Filtering materials				
	(ceramic, in isolation of A83543 compds. from fermn. broth of Saccharopolyspora spinosa)				
IT	Cottonseed				
	(flour, in culture of Saccharopolyspora spinosa, process for isolation of A83543 compds. from fermn. broth in relation to)				
IT	Fish				
	(meal, in culture of Saccharopolyspora spinosa, process for isolation of A83543 compds. from fermn. broth in relation to)				
IT	50-69-1, D-Ribose 50-99-7, D-Glucose, uses 57-48-7, D-Fructose, uses 58-86-6, D-Xylose, uses 59-23-4, D-Galactose, uses 69-65-8, Mannitol				

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69-79-4, Maltose 112-62-9, Methyl oleate 3458-28-4, Mannose  
 RL: BIOL (Biological study)  
 (in culture of Saccharopolyspora spinosa, process for isolation of  
 A83543 compds. from fermn. broth in relation to)  
 IT 631-61-8 9003-70-7 112627-66-4, Diaion HP 20SS  
 RL: BIOL (Biological study)  
 (in isolation of A83543 compds. from fermn. broth of Saccharopolyspora  
 spinosa)  
 IT 67-56-1, Methanol, uses 67-64-1, Acetone, uses 75-05-8, Acetonitrile,  
 uses  
 RL: USES (Uses)  
 (in isolation of A83543 compds. from fermn. broth of Saccharopolyspora  
 spinosa)  
 IT 131688-53-4D, A83543, analogs 131929-60-7 131929-61-8  
 131929-62-9 131929-63-0 131929-64-1  
 131929-65-2 131929-66-3 131929-67-4  
 132016-82-1 149092-01-3 149092-02-4  
 149092-03-5  
 RL: BIOL (Biological study)  
 (isolation from Saccharopolyspora spinosa fermn. broth of, process for)  
 IT 9004-53-9, Dextrin  
 RL: BIOL (Biological study)  
 (potato, in culture of Saccharopolyspora spinosa, process for isolation  
 of A83543 compds. from fermn. broth in relation to)  
 IT 9005-25-8, Starch, uses  
 RL: USES (Uses)  
 (sol., in culture of Saccharopolyspora spinosa, process for isolation  
 of A83543 compds. from fermn. broth in relation to)

L12 ANSWER 44 OF 52 HCAPLUS COPYRIGHT 1999 ACS  
 AN 1993:493694 HCAPLUS  
 DN 119:93694  
 TI Novel insecticidal members of the A83543 family of compounds and their  
 manufacture with Saccharopolyspora spinosa  
 IN Mynderse, Jon S.; Martin, James W.; Turner, Jan R.; Creemer, Lawrence C.;  
 Kirst, Herbert A.; Broughton, Mary C.; Huber, Mary L. B.  
 PA DowElanco, USA  
 SO U.S., 24 pp.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 IC ICM C12P019-62  
 ICS C12P019-60; C12R001-01  
 NCL 435076000  
 CC 16-2 (Fermentation and Bioindustrial Chemistry)  
 Section cross-reference(s): 1, 5

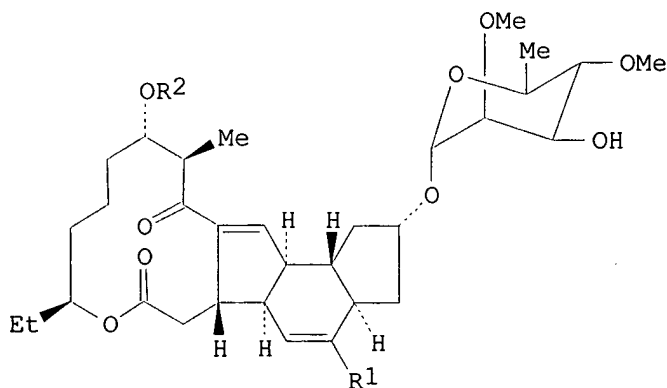
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5202242	A	19930413	US 91-790287	19911108
	CA 2099569	AA	19930509	CA 92-2099569	19921109
	WO 9309126	A1	19930513	WO 92-US9684	19921109
	W: AU, BR, CA, JP, RU, SD, UA				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, SE				
	AU 9331318	A1	19930607	AU 93-31318	19921109
	AU 666900	B2	19960229		
	EP 573628	A1	19931215	EP 92-925146	19921109
	EP 573628	B1	19990120		
	R: DE, ES, FR, GB, GR, IT, NL				
	BR 9205458	A	19940531	BR 92-5458	19921109
	JP 06506477	T2	19940721	JP 93-508775	19921109
	ES 2126605	T3	19990401	ES 92-925146	19921109
PRAI	US 91-790282		19911108		
	US 91-790287		19911108		



US 91-790616 19911108  
WO 92-US9684 19921109

GI



AB Novel 3'-O-desmethyl A83453 (I; R1=H,Me; R2=H, amino sugar deriv.) with insecticidal properties are manufd. by cultures of *Saccharopolyspora spinosa* and N-desmethyl derivs. and pseudoaglycones prepd. chem. from these compds. These compds. are effective at concns. of 200-400 ppm against aster leafhopper, beet armyworm, German cockroach, and tobacco budworm. These compds. were manufd. by culture of isolates of *S. spinosa* in a complex medium and purified by solvent extn. of mycelium and HPLC. The prepn. of the N-desmethyl and pseudoaglycone derivs. and the conversion of the prior art compd. A83543J to the novel A83543M were demonstrated.

ST A83543 deriv insecticidal fermn *Saccharopolyspora*

IT Insecticides

(A83543 derivs. manuf. with *Saccharopolyspora spinosa* as)

IT *Saccharopolyspora spinosa*

(insecticidal A83543 derivs. manuf. with)

IT Fermentation

(insecticidal A83543 derivs., with *Saccharopolyspora spinosa*)

IT 149092-04-6P 149124-49-2P

RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP (Preparation)

(manuf. of, with *Saccharopolyspora spinosa*)

IT 149092-02-4P, A 83543M

RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP (Preparation)

(manuf. of, with *Saccharopolyspora spinosa*, prepn. from A83543J of)

IT 149092-03-5P, A 83543N

RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP (Preparation)

(manuf. of, with *Saccharopolyspora spinosa*, prepn. from A83543L of)

IT 149092-01-3P, A 83543L

RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP (Preparation)

(manuf. of, with *Saccharopolyspora spinosa*, prepn. of A83543N from)

IT 149092-05-7P

RL: PREP (Preparation)

(prepn. from A83543L of)

IT 131929-67-4, A 83543J

RL: RCT (Reactant)

(reaction of, in prepn. A 83543M)

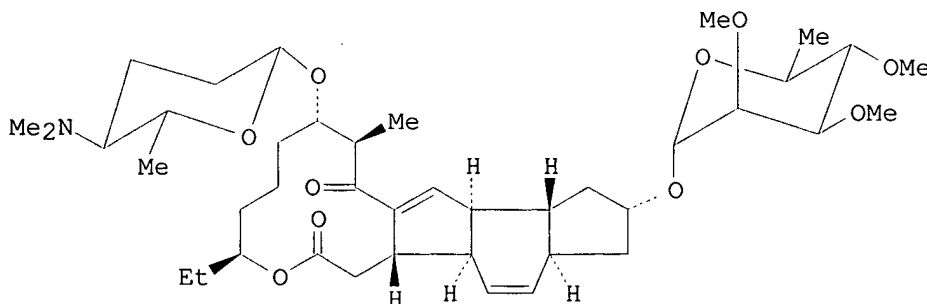
L12 ANSWER 45 OF 52 BIOSIS COPYRIGHT 1999 BIOSIS

AN 1993:413212 BIOSIS

KATHLEEN FULLER STIC LIBRARY 308-4290

DN PREV199396078937  
TI Total synthesis of (dextro)-A83543A (dextro)-lepigidin A.  
AU Evans, David A. (1); Black, W. Cameron  
CS (1) Dep. Chem., Harvard Univ., Cambridge, MA 02138 USA  
SO Journal of the American Chemical Society, (1993) Vol. 115, No. 11, pp.  
4497-4513.  
ISSN: 0002-7863.  
DT Article  
LA English  
AB The first synthesis of the macrolide **insecticide** A83543A  
(lepigidin A) has been completed using a Diels-Alder strategy to construct  
the carbocyclic framework. Diene synthesis through Pd-catalyzed Stille  
coupling of a macrocyclic vinylstannane and suitably functionalized vinyl  
iodide was followed by a diastereoselective Lewis acid-mediated  
intramolecular Diels-Alder reaction to construct the trans hydrindene  
subunit. Refunctionalization and intramolecular aldol condensation  
afforded the differentially protected (+)-lepigidin A aglycon. Successive  
glycosidations with 2,3,4-tri-O-methyl-D-rhamnose and N-protected  
L-forosamine followed by deprotection and methylation completed the  
synthesis of the enantiomer of the natural product.  
CC Biochemical Methods - General \*10050  
Biochemical Methods - Carbohydrates \*10058  
Biochemical Studies - General 10060  
Biochemical Studies - Carbohydrates 10068  
Pest Control, General; Pesticides; Herbicides \*54600  
Economic Entomology - Chemical and Physical Control, General; Apparatus  
\*60016  
IT Major Concepts  
Economic Entomology; Methods and Techniques; Pest Assessment Control  
and Management  
IT Chemicals & Biochemicals  
A83543A  
IT Miscellaneous Descriptors  
ANOREXIA NERVOSA; BULIMIA; STATISTICS  
GT USA (North America, Nearctic region)  
RN 131929-60-7 (A83543A)  
  
L12 ANSWER 46 OF 52 HCAPLUS COPYRIGHT 1999 ACS  
AN 1993:232340 HCAPLUS  
DN 118:232340  
TI Response surface methods for optimizing Saccharopolyspora spinosa, a novel  
macrolide producer  
AU Strobel, R. J., Jr.; Nakatsukasa, W. M.  
CS Lilly Res. Lab., Eli Lilly and Co., Indianapolis, IN, USA  
SO J. Ind. Microbiol. (1993), 11(2), 121-7  
CODEN: JIMIE7; ISSN: 0169-4146  
DT Journal  
LA English  
CC 16-5 (Fermentation and Bioindustrial Chemistry)  
AB Strain A83543, recently identified as S. spinosa, was cultured in a  
variety of media to optimize macrolide titer. Response surface methodol.  
(RSM) was used to improve the fermn. medium and to characterize the  
microorganism's response to systematic variations in medium compn. Three  
sequential RSM studies on wild-type A83543 and 2 high macrolide-producing  
mutants showed that each strain produced max. titers in nearly identical  
fermn. media. No obvious differences in nutrient requirements were  
evident in the 3 strains, indicating little interaction between mutational  
change and medium compn. through at least 2 cycles of mutagenesis. The  
overall increase in macrolide titer starting from the wild-type organism  
in the original fermn. medium to the 2nd-generation mutant in the  
optimized medium was over 25-fold.  
ST Saccharopolyspora macrolide fermn  
IT Saccharopolyspora spinosa  
(macrolide antibiotic manuf. with)

IT Fermentation  
(macrolide antibiotic, with *Saccharopolyspora spinosa*)  
IT Antibiotics  
(macrolide, manuf. of, with *Saccharopolyspora spinosa*)  
IT **131929-60-7P 131929-63-0P**  
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP  
(Preparation)  
(manuf. of, with *Saccharopolyspora spinosa*)  
  
L12 ANSWER 47 OF 52 BIOSIS COPYRIGHT 1999 BIOSIS  
AN 1992:220052 BIOSIS  
DN BR42:101552  
TI ASYMMETRIC SYNTHESIS OF THE MACROLIDE DEXTRO A83543A LEPICIDIN AGLYCON.  
AU EVANS D A; BLACK W C  
CS DEP. CHEMISTRY, HARVARD UNIV., CAMBRIDGE, MASSACHUSETTS 02138.  
SO J. Am. Chem. Soc., (1992) 114 (6), 2260-2262.  
CODEN: JACSAT. ISSN: 0002-7863.  
FS BR; OLD  
LA English  
CC Biochemical Studies - General \*10060  
Biophysics - Molecular Properties and Macromolecules 10506  
Pest Control, General; Pesticides; Herbicides \*54600  
Economic Entomology - Chemical and Physical Control, General; Apparatus  
\*60016  
Invertebrata, Comparative and Experimental Morphology, Physiology and  
Pathology - Insecta - Physiology \*64076  
BC Lepidoptera 75330  
IT Miscellaneous Descriptors  
LEPIDOPTERA LARVAE **INSECTICIDAL** ACTIVITY INTRAMOLECULAR  
DIELS-ALDER REACTION ABSOLUTE CONFIGURATION  
RN **131929-60-7** (A83543A)  
  
L12 ANSWER 48 OF 52 HCAPLUS COPYRIGHT 1999 ACS  
AN 1993:76674 HCAPLUS  
DN 118:76674  
TI Discovery, isolation, and structure elucidation of a family of  
structurally unique, fermentation-derived tetracyclic macrolides  
AU Kirst, Herbert A.; Michel, Karl H.; Mynderase, Jon S.; Chio, Eddie H.;  
Yao, Raymond C.; Nakasukasa, Walter M.; Boeck, LaVerne D.; Occlowitz, John  
L.; Paschal, Jonathon W.; et al.  
CS Lilly Res. Lab., Eli Lilly Co., Indianapolis, IN, 46285, USA  
SO ACS Symp. Ser. (1992), 504 (Synth. Chem. Agrochem. III), 214-25  
CODEN: ACSMC8; ISSN: 0097-6156  
DT Journal  
LA English  
CC 10-1 (Microbial, Algal, and Fungal Biochemistry)  
Section cross-reference(s): 5  
GI



AB Screening of fermn. broths for mosquito larvicidal activity yielded an active culture denoted as A83543. Nine active, structurally-related factors were isolated and purified by extractive and chromatog. procedures. Their structures were elucidated by a combination of spectroscopic (NMR, MS, UV, IR) and x-ray crystallog. methods. Each factor possessed the core structure of a 5,6,5-cis-anti-trans-tricyclic ring system fused to a 12-membered lactone. In addn., an aminosugar (forosamine) and a neutral sugar (2,3,4-tri-O-methylrhamnose) were glycosidically linked to the tetracyclic framework. Abs. stereochem. was established by comparing samples of forosamine obtained from acidic hydrolyses of A83543A (I) and spiramycin. The novel tetracyclic structure of A83543 suggests that unique features are involved in its biosynthesis. The purified factors exhibited potent mosquito larvicidal activity, but lacked antibiotic activity.

ST Saccharopolyspora tetracyclic macrolide A83543 insecticide

IT Saccharopolyspora spinosa  
(insecticidal tetracyclic macrolides from)

IT Insecticides  
(tetracyclic macrolides, from Saccharopolyspora spinosa)

IT Lactones  
RL: BIOL (Biological study)  
(macrolides, tetracyclic, from Saccharopolyspora spinosa, insecticidal properties of)

IT Cyclic compounds  
RL: BIOL (Biological study)  
(tetra, insecticidal, from Saccharopolyspora spinosa)

IT 131929-68-5  
RL: BIOL (Biological study)  
(from Saccharopolyspora spinosa)

IT 131929-60-7, A 83543A 131929-61-8, A 83543B  
131929-62-9, A 83543C 131929-63-0, A 83543D  
131929-64-1, A 83543E 131929-65-2, A 83543F  
131929-66-3, A 83543H 131929-67-4, A 83543J  
132016-82-1, A 83543G  
RL: AGR (Agricultural use); BAC (Biological activity or effector, except adverse); BIOL (Biological study); USES (Uses)  
(insecticide, from Saccharopolyspora spinosa)

L12 ANSWER 49 OF 52 HCAPLUS COPYRIGHT 1999 ACS

AN 1991:581518 HCAPLUS

DN 115:181518

TI A83543 recovery from fermentation broths

IN Baker, Patrick James

PA Lilly, Eli, and Co., USA

SO PCT Int. Appl., 27 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C07H001-06

ICS C07H001-08; C07H017-08

CC 16-2 (Fermentation and Bioindustrial Chemistry)

Section cross-reference(s): 5

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9106552	A1	19910516	WO 90-US6187	19901026
	W: AU, BR, JP				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
	AU 9066414	A1	19910531	AU 90-66414	19901026
	AU 631693	B2	19921203		
	EP 454820	A1	19911106	EP 90-916854	19901026
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	BR 9006982	A	19911224	BR 90-6982	19901026
	JP 05504469	T2	19930715	JP 90-515669	19901026

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	US 5362634	A	19941108	US 91-773754	19911010
	FI 9500946	A	19950301	FI 95-946	19950301
	FI 96224	B	19960215		
	FI 96224	C	19960527		
	US 5496931	A	19960305	US 95-406760	19950317
	US 5571901	A	19961105	US 95-479500	19950607

PRAI US 89-429441 19891030  
 US 89-451394 19891215  
 US 88-286591 19881219  
 FI 89-6053 19891218  
 WO 90-US6187 19901026  
 US 91-773754 19911010  
 US 93-141174 19931022  
 US 95-406760 19950317

AB A process for recovering insecticides A83543 from fermn. broths by solvent extn. is described. The broth is mixed with a water misc. solvent (e.g. acetone) and the biomass removed. The ext. is itself extd. with an immiscible solvent such as ethyl acetate at a pH 10-11. The org phase is recovered and concd. and the water phase that separates is removed and the org. phase back-extd. with a dil. acid (e.g. tartaric acid) and A83543 is pptd. with dil. base and collected by filtration.

ST A83543 insecticide recovery fermn

IT 67-64-1, Acetone, biological studies 87-69-4, Tartaric acid, biological studies 141-78-6, Ethyl acetate, biological studies  
 RL: BIOL (Biological study)  
 (in recovery of A83543 insecticides from fermn. broth)

IT **131929-60-7P**, A 83543A **131929-63-0P**, A 83543D  
 RL: PREP (Preparation)  
 (recovery of, from fermn. broth, improved method for)

L12 ANSWER 50 OF 52 HCAPLUS COPYRIGHT 1999 ACS  
 AN 1991:675353 HCAPLUS  
 DN 115:275353  
 TI A83543A-D, unique fermentation-derived tetracyclic macrolides  
 AU Kirst, Herbert A.; Michel, Karl H.; Martin, James W.; Creemer, Lawrence C.; Chio, Eddie H.; Yao, Raymond C.; Nakatsukasa, Walter M.; Boeck, LaVerne D.; Occolowitz, John L.; et al.  
 CS Lilly Res. Lab., Eli Lilly and Co., Indianapolis, IN, 46285, USA  
 SO Tetrahedron Lett. (1991), 32(37), 4839-42  
 CODEN: TELEAY; ISSN: 0040-4039  
 DT Journal  
 LA English  
 CC 10-1 (Microbial Biochemistry)  
 Section cross-reference(s): 5

AB A multi-factored complex of structurally-unique macrolides was isolated from culture broths of a new species of Saccharopolyspora. The core structure consists of a 5,6,5-cis-anti-trans-tricyclic ring system fused to a 12-membered macrocyclic lactone, which is further substituted by an amino and a neutral sugar.

ST Saccharopolyspora macrolide A83543A mosquito larvicide

IT Saccharopolyspora spinosa  
 (tetracyclic macrolides from, A83543A as, mosquito larvicidal activity of)

IT Insecticides  
 (larvicidal, A83543A tetracyclic macrolide as, from Saccharopolyspora spinosa)

IT Lactones  
 RL: BIOL (Biological study)  
 (macrolides, A83543A, from Saccharopolyspora spinosa, mosquito larvicidal activity of)

IT **131929-60-7**, A 83543A **131929-61-8**, A 83543B  
**131929-62-9**, A 83543C **131929-63-0**, A 83543D  
 RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)

(from Saccharopolyspora spinosa, mosquito larvicidal activity of)

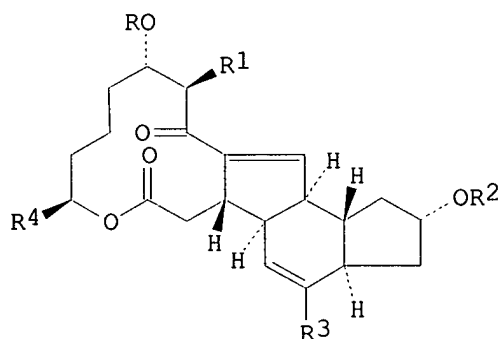
L12 ANSWER 51 OF 52 BIOSIS COPYRIGHT 1999 BIOSIS  
 AN 1991:401710 BIOSIS  
 DN BR41:63555  
 TI BIOSYNTHESIS OF THE MACROLIDE **INSECTICIDAL** COMPOUND A-83543A BY  
 SACCHAROPOLYSPORA-SPINOSA.  
 AU BROUGHTON M C; HUBER M L B; CREEMER L C; KIRST H A; TURNER J R  
 CS LILLY RES. LAB., ELI LILLY, INDIANAPOLIS, INDIANA 46285.  
 SO 91ST GENERAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY, DALLAS,  
 TEXAS, USA, MAY 5-9, 1991. ABSTR GEN MEET AM SOC MICROBIOL. (1991) 91 (0),  
 224.  
 CODEN: AGMME8.  
 DT Conference  
 FS BR; OLD  
 LA English  
 CC General Biology - Symposia, Transactions and Proceedings of Conferences,  
 Congresses, Review Annuals 00520  
 Biochemical Methods - General 10050  
 Biochemical Studies - General 10060  
 Metabolism - General Metabolism; Metabolic Pathways \*13002  
 Food and Industrial Microbiology - Antibiotics, Biologics, Other Agents  
 \*39004  
 Plant Physiology, Biochemistry and Biophysics - Metabolism \*51519  
 Plant Physiology, Biochemistry and Biophysics - Chemical Constituents  
 51522  
 Pest Control, General; Pesticides; Herbicides 54600  
 Economic Entomology - Biological Control \*60014  
 Economic Entomology - Chemical and Physical Control, General; Apparatus  
 \*60016  
 BC Fungi - Unspecified 15000  
 IT Miscellaneous Descriptors  
 ABSTRACT FERMENTATION BIOLOGICAL CONTROL **INSECTICIDE**  
 BIOTECHNOLOGY  
 RN 131929-60-7 (A-83543A)

L12 ANSWER 52 OF 52 HCAPLUS COPYRIGHT 1999 ACS  
 AN 1991:80066 HCAPLUS  
 DN 114:80066  
 TI Novel macrolide insecticides from Saccharopolyspora spinosa  
 IN Boeck, LaVerne Dwaine; Chio, Hang; Eaton, Tom Edward; Godfrey, Otis  
 Webster, Jr.; Michel, Karl Heinz; Nakatsukasa, Walter Mitsuo; Yao, Raymond  
 Che Fong  
 PA Lilly, Eli, and Co., USA  
 SO Eur. Pat. Appl., 78 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 IC ICM C07H017-08  
 ICS C12P019-62; C12N001-20  
 ICI C12N001-20, C12R001-01; C12P019-62, C12R001-01  
 CC 16-2 (Fermentation and Bioindustrial Chemistry)  
 Section cross-reference(s): 5, 10  
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	EP 375316	A1	19900627	EP 89-313195	19891218
	EP 375316	B1	19941228		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	IL 92743	A1	19941021	IL 89-92743	19891217
	CA 2005784	AA	19900619	CA 89-2005784	19891218
	CA 2005784	C	19990202		
	NO 8905096	A	19900620	NO 89-5096	19891218
	NO 176914	B	19950313		

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NO 176914	C	19950621		
DK 8906420	A	19900620	DK 89-6420	19891218
AU 8946891	A1	19900621	AU 89-46891	19891218
AU 624458	B2	19920611		
CN 1043742	A	19900711	CN 89-109377	19891218
CN 1035391	B	19970709		
HU 52562	A2	19900728	HU 89-6661	19891218
BR 8906547	A	19900904	BR 89-6547	19891218
JP 02223589	A2	19900905	JP 89-328100	19891218
JP 2535080	B2	19960918		
ZA 8909680	A	19900926	ZA 89-9680	19891218
DD 290351	A5	19910529	DD 89-335848	19891218
IN 169756	A	19911221	IN 89-CA1041	19891218
PL 161476	B1	19930630	PL 89-282843	19891218
ES 2065398	T3	19950216	ES 89-313195	19891218
FI 95601	B	19951115	FI 89-6053	19891218
FI 95601	C	19960226		
RO 106065	B1	19930226	RO 89-143411	19891219
US 5362634	A	19941108	US 91-773754	19911010
FI 9500946	A	19950301	FI 95-946	19950301
FI 96224	B	19960215		
FI 96224	C	19960527		
US 5496931	A	19960305	US 95-406760	19950317
US 5571901	A	19961105	US 95-479500	19950607
PRAI US 88-286591		19881219		
US 89-429441		19891030		
FI 89-6053		19891218		
US 91-773754		19911010		
US 93-141174		19931022		
US 95-406760		19950317		
OS MARPAT 114:80066				
GI				



I

AB Novel macrolide compds. A83543 (I; R=H, substituted sugar; R1, R3 = H, Me; R2 = (substituted) methoxy sugar, R4 = Me, Et) are manufd. by *Saccharopolyspora spinosa*. These compds. have insecticidal and miticidal activities against agricultural pests, particularly ectoparasites and may act systemically. A83543A and A83543D were prepd. from cells grown in a complex medium by extn. with MeOH and hydrophobic, high-performance, and reverse-phase chromatog. to recover 778 mg A83543A and 212 mg A83543D from 10 L medium. In tests on Southern armyworms A83543A was effective topically at 50 ppm on 1st and 2nd instar, but became less effective at later stages. When foliar applications on bushbeans were used the compd. was effective at 10 ppm up to 3rd instar.

ST A83543 insecticide miticide fermn *Saccharopolyspora*; ectoparasite systemic treatment A83543

IT Feed  
(additives, ectoparasiticidal, compds. A83543 of *Saccharopolyspora*  
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spinosa as)  
 IT Saccharopolyspora spinosa  
     (insecticidal and miticidal compds. A83543 manuf. with)  
 IT Fermentation  
     (insecticidal and miticidal compds. A83543, with Saccharopolyspora  
     spinosa)  
 IT Molecular structure, natural product  
     (of compd. A83543A pseudoglycone, from Saccharopolyspora spinosa)  
 IT Molecular structure, natural product  
     (of compd. A83543A, from Saccharopolyspora spinosa)  
 IT Molecular structure, natural product  
     (of compd. A83543B, from Saccharopolyspora spinosa)  
 IT Molecular structure, natural product  
     (of compd. A83543C, from Saccharopolyspora spinosa)  
 IT Molecular structure, natural product  
     (of compd. A83543D, from Saccharopolyspora spinosa)  
 IT Molecular structure, natural product  
     (of compd. A83543E, from Saccharopolyspora spinosa)  
 IT Molecular structure, natural product  
     (of compd. A83543F, from Saccharopolyspora spinosa)  
 IT Molecular structure, natural product  
     (of compd. A83543G, from Saccharopolyspora spinosa)  
 IT Molecular structure, natural product  
     (of compd. A83543H, from Saccharopolyspora spinosa)  
 IT Molecular structure, natural product  
     (of compd. A83543J, from Saccharopolyspora spinosa)  
 IT Acaricides  
     Insecticides  
         (systemic, compds. A83543 from Saccharopolyspora spinosa as)  
 IT Pharmaceutical dosage forms  
     (injections, for compds. A83543, as systemic ectoparasitocides)  
 IT 131688-53-4DP, A 83543, substitution derivs. 131929-55-0P 131929-56-1P  
     131929-57-2P 131929-58-3P 131929-59-4P **131929-60-7P**, A  
     83543A **131929-61-8P**, A 93543B **131929-62-9P**, A 83543C  
     **131929-63-0P**, A 83543D **131929-64-1P**, A 83543E  
     **131929-65-2P**, A 83543F **131929-66-3P**, A 83543H  
     **131929-67-4P**, A 83543J 131929-68-5P, A 83543A Pseudoglycone  
     **132016-82-1P**, A 83543G  
 RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP  
     (Preparation)  
     (manuf. of, with Saccharopolyspora spinosa)